

FIG. 1

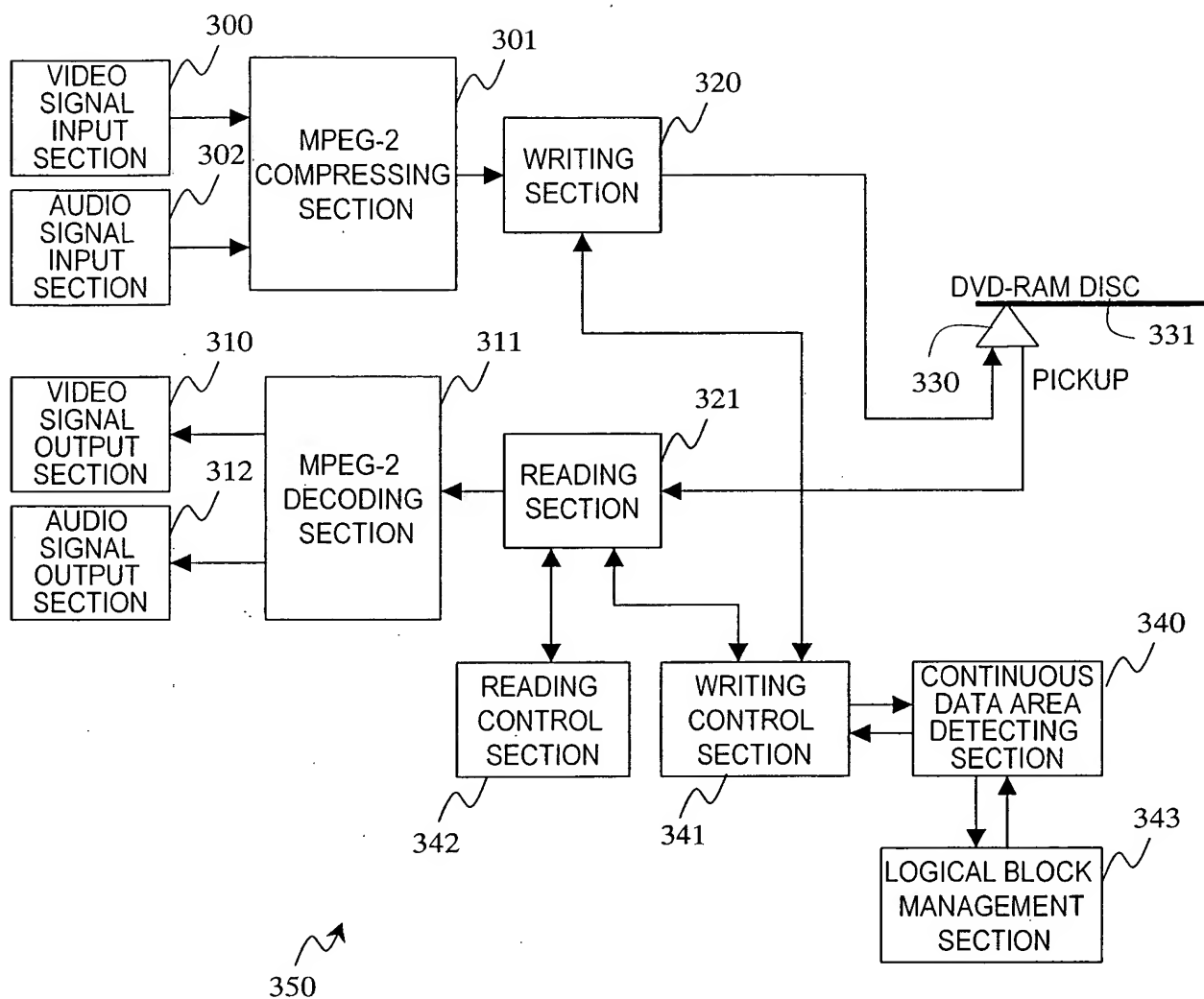


FIG. 2

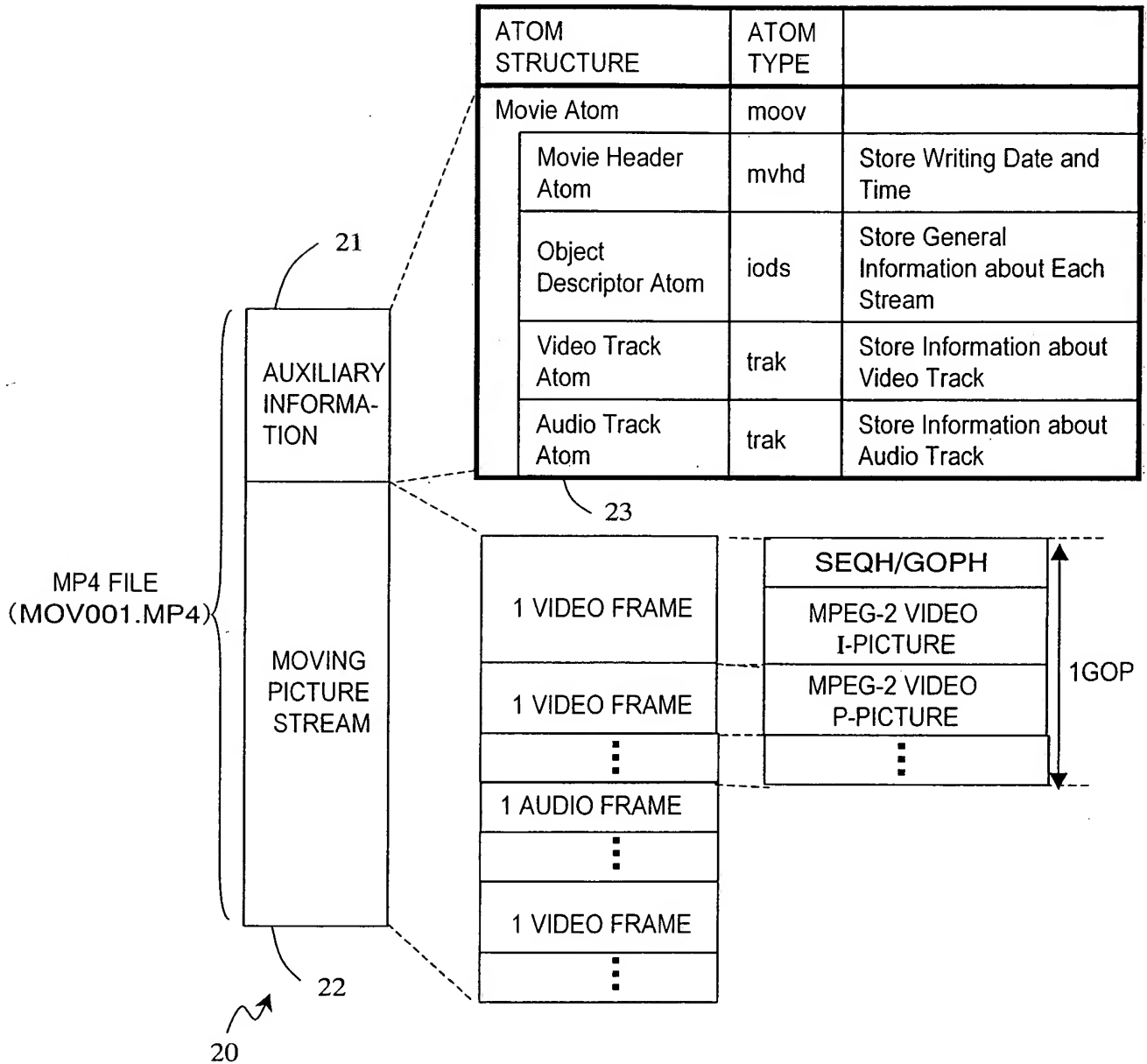


FIG.3

ATOM STRUCTURE	ATOM TYPE
Movie Atom	moov
Movie Header Atom	mvhd
Object Descriptor Atom	iods
Video Track Atom	trak
Audio Track Atom	trak

ATOM STRUCTURE	ATOM TYPE	
VIDEO TRACK ATOM	trak	(Declaration of Track Atom)
Track Header Atom	tkhd	Store Track ID
Edit List Atom	edts	(Declaration of Edit List Atom)
Edit List Atom	elst	Specify Playback Range and Timings
Media Atom	mdia	(Declaration of Media Atom)
Media Header Atom	mdhd	Specify Time Information Unit
Handler Reference Atom	hdlr	Store Information Showing Identity as Video Track
Media Information Atom	minf	(Declaration of Media Information Atom)
Video Media Header Atom	nmhd	Show Identity as Video Data
Data Information Atom	dinf	(Declaration of Data Information Atom)
Data Reference Atom	dref	Store Its File Name If Moving Picture Stream is Separate File
Sample Table Atom	stbl	(Declaration of Sample Table Atom)
Decoding Time to Sample Atom	stts	Store Decoding Time of Each Video Frame
Composition Time to Sample Atom	ctts	Store Presentation Time of Each Video Frame
Sample Description Atom	stsd	Store Information Showing Identity of Video Track as MPEG-2 Video and Store Audio Track Attribute
Sample Size Atom	stsz	Store Data Size of Each Video Frame
Sample to Chunk Atom	stsc	Store the Number of Video Frames to Make One Chunk
Chunk Offset Atom	stco	Store Top Address of Chunk

FIG. 4

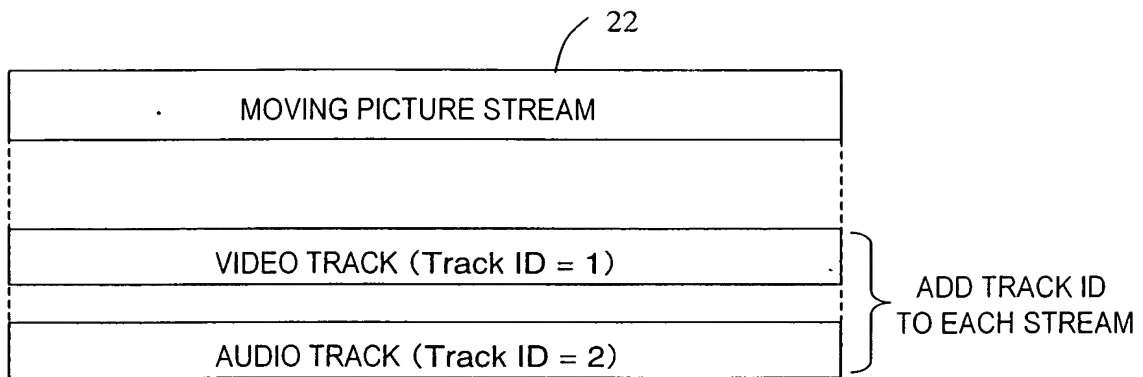
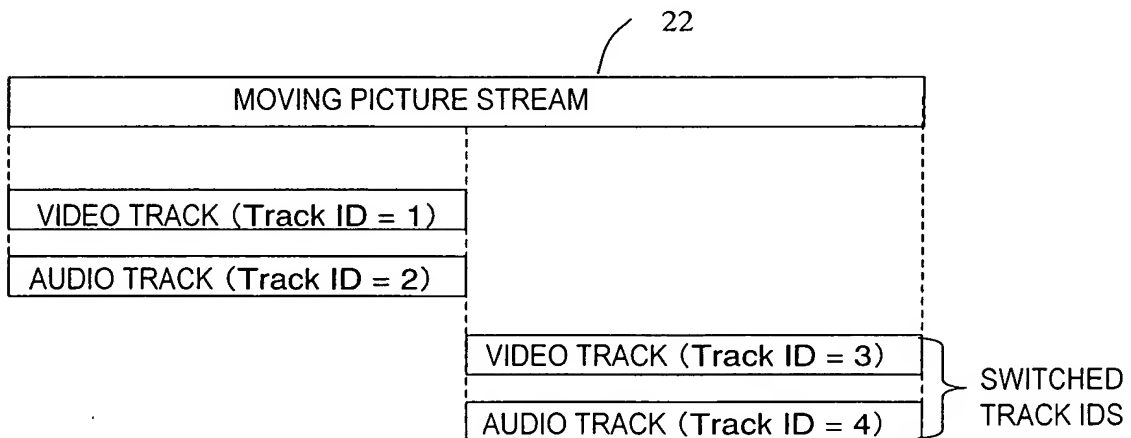


FIG. 5



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FIG. 7

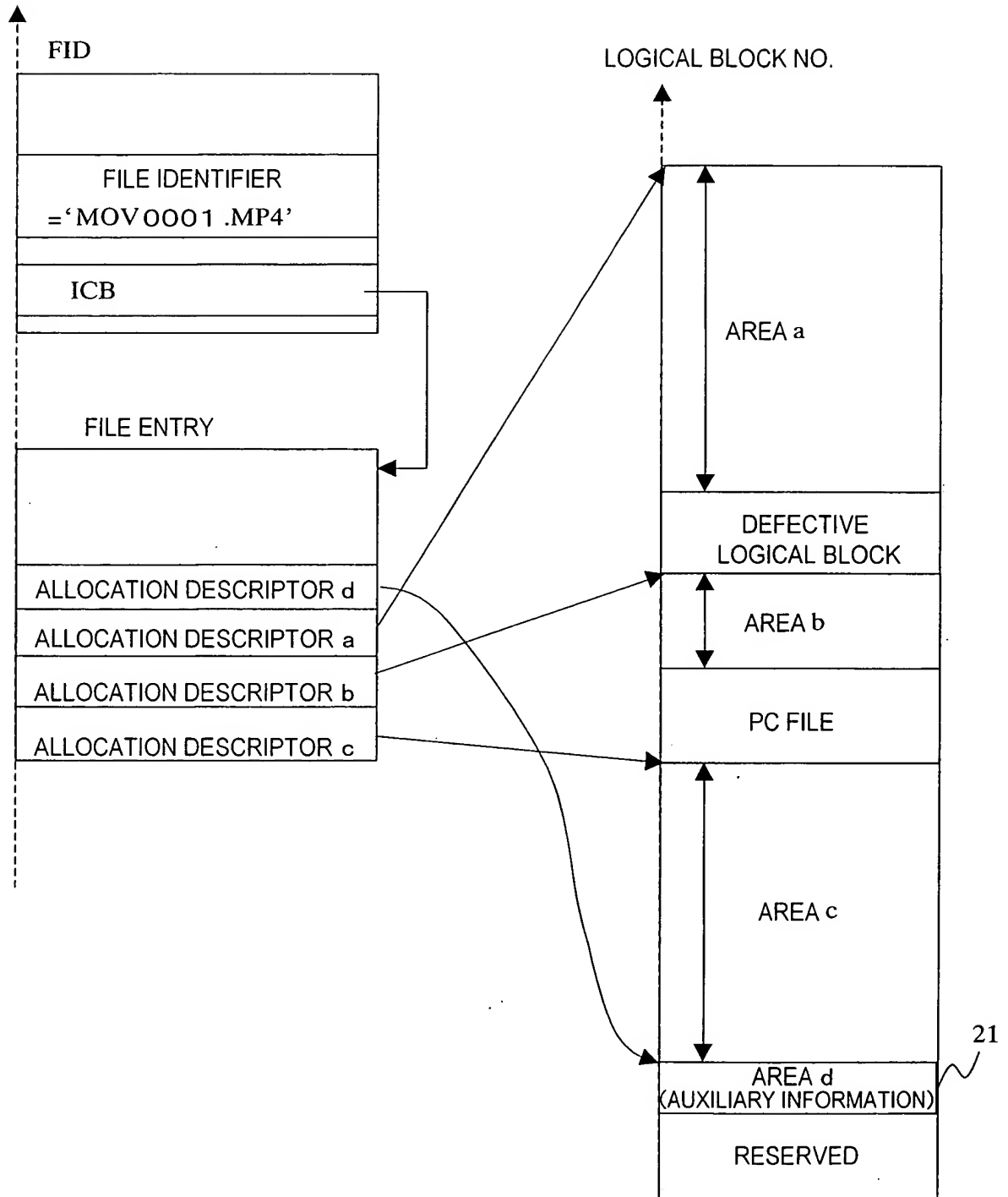


FIG. 8

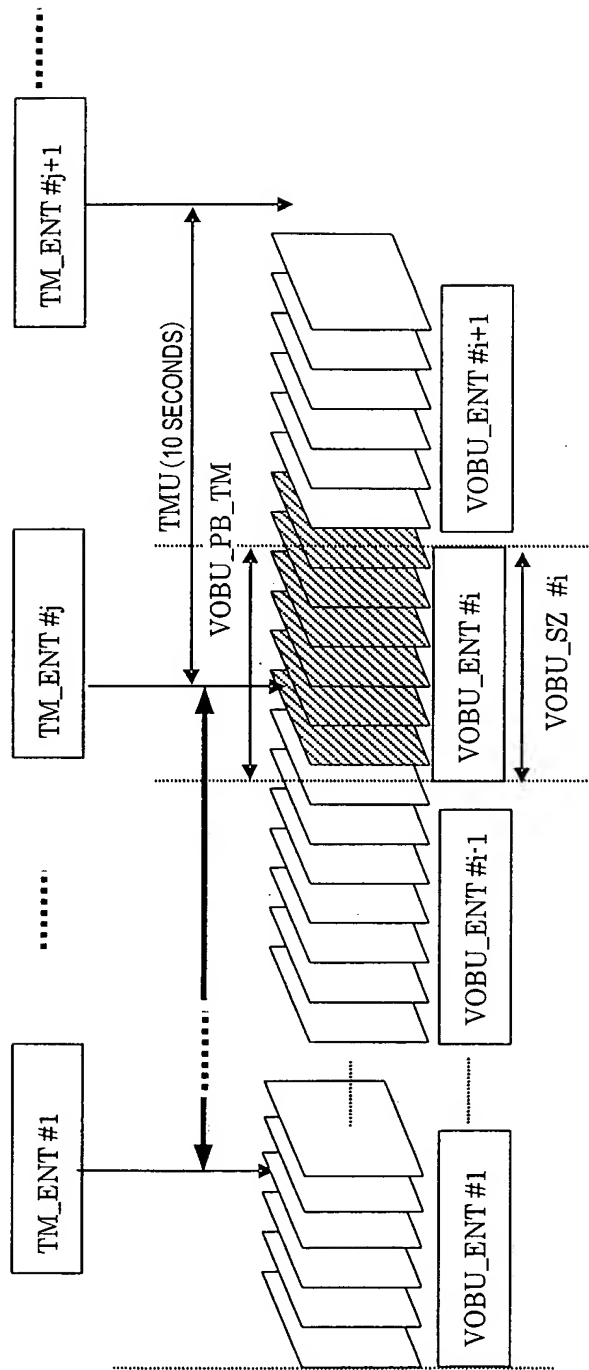


FIG.9

	FIELD NAME	SETTING
Time Map General Information	TMAP_GI	
	No. of Time Entries	Total Number of Time Entries
	No. of VOBUs	Total Number of VOBUs
	Time Offset	Number of Video Fields
	Address Offset	Number of LBNs (F_RLBN)
Time Entry	TM_ENT	
	VOBU_ENTN	VOBU Entry No
	TM_DIFF	Number of Video Fields
	VOBU_ADR	Number of LBNs (F_RLBN)
VOBU Entry	VOBU_ENT	
	1STREF_SZ	Number of Packs
	VOBU_PB_TM	Number of Video Fields
	VOBU_SZ	Number of Packs

FIG. 10

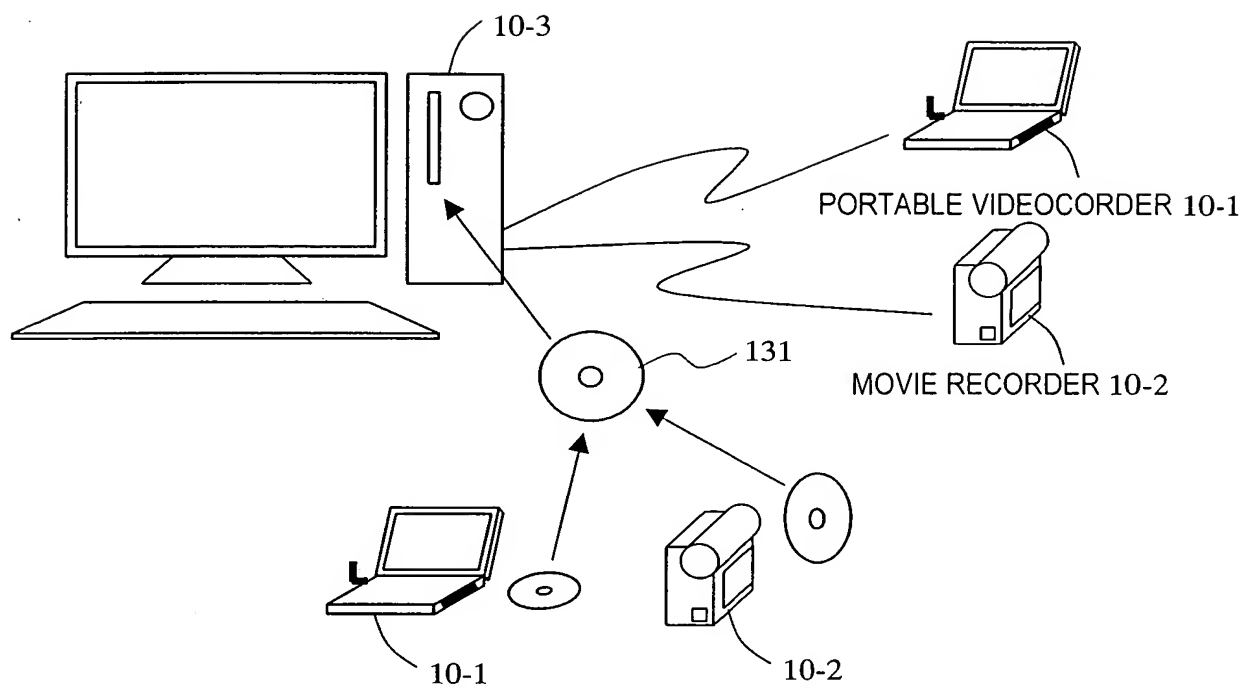


FIG. 11

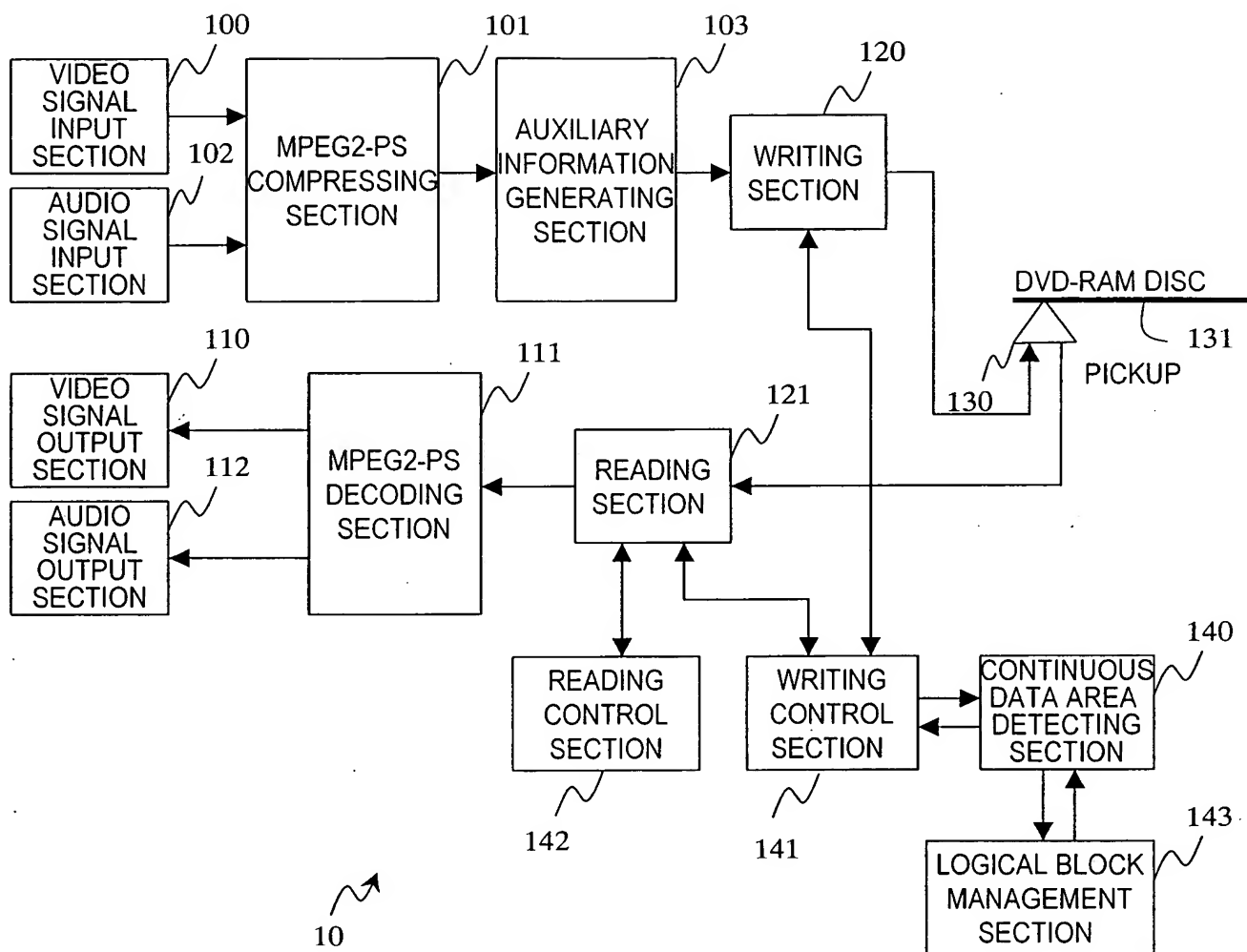


FIG. 12

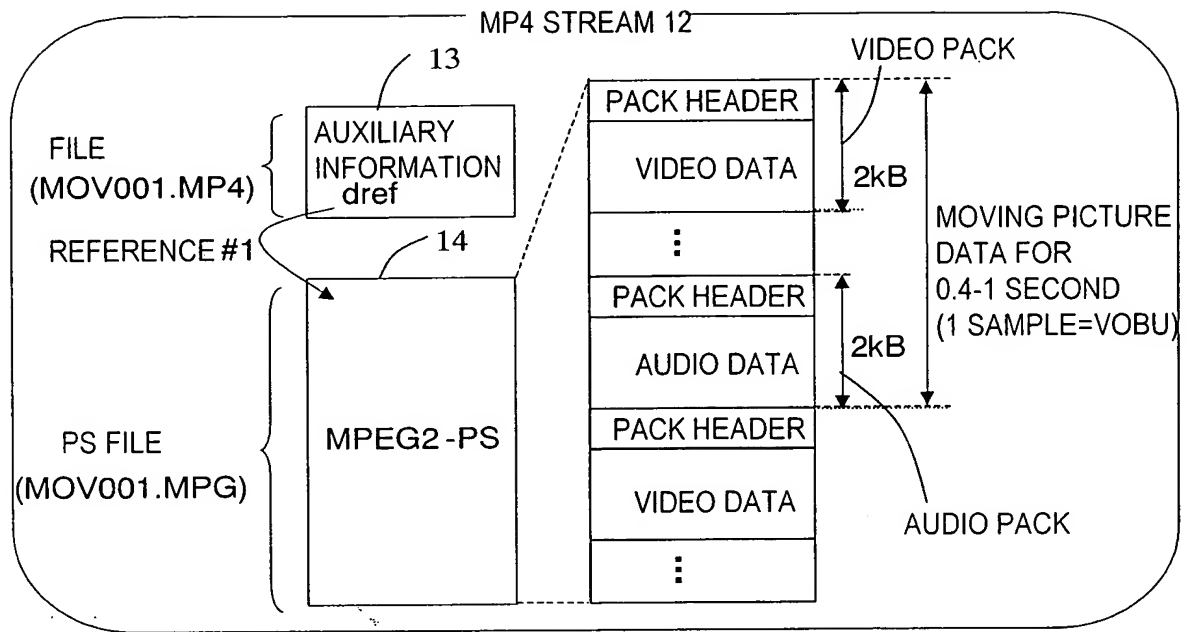


FIG. 13

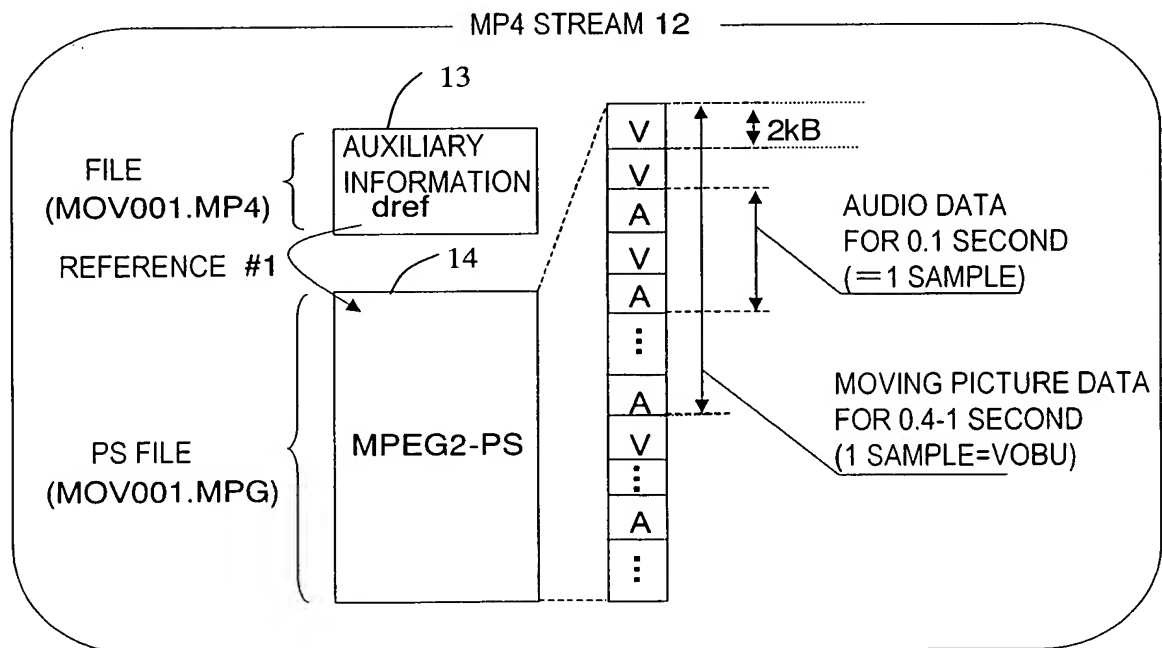


FIG. 14

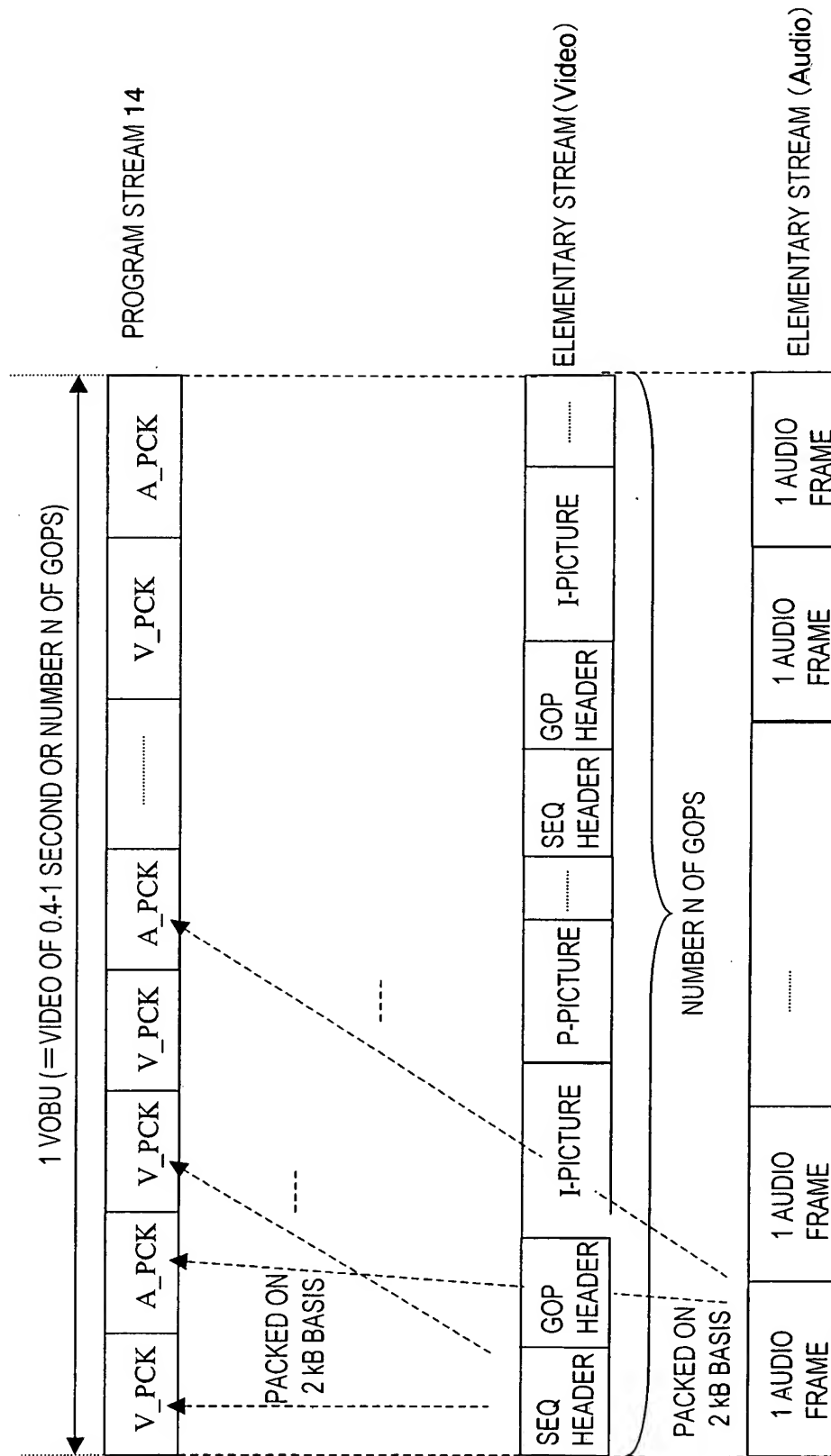
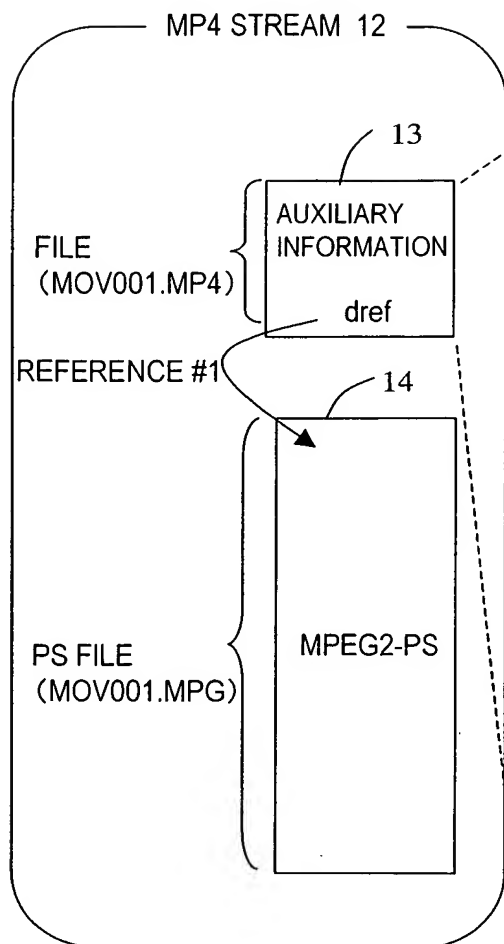


FIG. 15



ATOM STRUCTURE	ATOM TYPE
Movie Atom	moov
Movie Header Atom	mvhd
Object Descriptor Atom	iods
Track Atom	trak
Track Header Atom	tkhd
Edit List Atom	edts
Edit List Atom	elst
Media Atom	mdia
Media Header Atom	mdhd
Handler Reference Atom	hdlr
Media Information Atom	minf
Null Media Header Atom	nmhd
Data Information Atom	dinf
Data Reference Atom	dref
Sample Table Atom	stbl
Decoding Time to Sample Atom	stts
Sample Description Atom	stsd
Sample Size Atom	stsz
Sample to Chunk Atom	stsc
Chunk Offset Atom	stco
User Data Atom	udta
Reference Picture Size Atom	rfsz

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FIG.16

ATOM STRUCTURE	ATOM TYPE	
Movie Atom	moov	(Declaration of Movie Atom)
Movie Header Atom	mvhd	Store Writing Date and Time
Object Descriptor Atom	iods	Store General Information about Each Stream
Track Atom	trak	(Declaration of Track Atom)
Track Header Atom	tkhd	Store Track ID
Edit List Atom	edts	(Declaration of Edit List Atom)
Edit List Atom	elst	Specify Playback Range and Timings
Media Atom	mdia	(Declaration of Media Atom)
Media Header Atom	mdhd	Specify Time Information Unit
Handler Reference Atom	hdlr	Store Handler_type="m2ps" Showing Identity as MPEG2-PS
Media Information Atom	minf	(Declaration of Media Information Atom)
Null Media Header Atom	nmhd	Show Identity as Neither Video Frame nor Audio Frame
Data Information Atom	dinf	(Declaration of Data Information Atom)
Data Reference Atom	dref	Store Moving Picture Stream File in URL Form
Sample Table Atom	stbl	(Declaration of Sample Table Atom)
Decoding Time to Sample Atom	stts	Store Playback Duration of Each VOB
Sample Description Atom	stsd	Show Specifications of MPEG2-PS
Sample Size Atom	stsz	Store Size of Each VOB
Sample to Chunk Atom	stsc	Store the Number of VOBs to Make One Chunk When Overall MPEG File is Treated as One Chunk
Chunk Offset Atom	stco	Store Chunk Offset=0 as MPEG2-PS Starts from Beginning of MPEG File
User Data Atom	udta	(Declaration of User Data Atom)
Reference Picture Size Atom	rfsz	Store End Location of Top I-Frame of Each VOB as Offset Value from Top of VOB

FIG.17

Data Reference Atom 15

field	value
size	33
type	'dref'
entry_count	1
DataEntryUriAtom	

DataEntryUriAtom

field	value
size	21
type	'url'
location	'./MOV0001.MPG'

FIG.18

ATOM TYPE	FIELD NAME	REPEAT- ABLE ?	DATA SIZE [UNIT]	DESCRIPTION	SETTING
<div> <div>Sample Table Atom</div> <div>Decoding Time to Sample Atom</div> <div>Sample Description Atom</div> <div>Sample Size Atom</div> <div>Sample to Chunk Atom</div> <div>Chunk Offset Atom</div> <div>In User Reference Picture Data Size Atom</div> </div>	stbl				
	entry-count		4[Byte]	Number of Entries	
	sample-count	○	4[Byte]	Number of Samples	
	sample delta	○	4[Byte]	Sample time scale	VOBU_ENT VOBU_PB_TM
	m2av (NEW)				
	sample-size		4[Byte]	Default Sample Data Size	
	sample count		4[Byte]	Number of Samples	VOBU_ENT VOBU_ENT_Ns
	entry-size		4[Byte]	Sample Data Size	VOBU_ENT VOBU_SZ
	entry-count		4[Byte]	Number of Entries	1 Entry
	first-chunk	○	4[Byte]	Chunk Index Number	
	samples-per-chunk	○	4[Byte]	Number of Samples	VOBU_ENT VOBU_ENT_Ns
	sample-description-index	○	4[Byte]	Sample description Index Number	
	entry-count		4[Byte]	Number of Entries	1 Entry
	chunk-offset		4[Byte]	Chunk Offset	TMAP_GI ADR_OFS
	entry-count		4[Byte]	Number of Entries	
	sync-sample-size	○	4[Byte]	Sync Sample Data Size	VOBU_ENT 1STREF_SZ

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FIG.19

Sample Description Atom 17

field	value
size	
type	'std'
version	1
number_of_entry	1
sample_description_entry	

Seamless Information

field	
Audio Discontinuity Information	
SCR Discontinuity Information	

sample_description_entry 18

field	value
size	
data-format	'p2sm'
version	1
data-reference-index	1
Writing Start Date and Time	May 05, 2001, 09:23:00
Presentation Start Time	
Presentation End Time	
Aspect Information	4:3
Video ES Attributes	
Audio ES Attributes	
Discontinuity Point Start Flag	0
Seamless Information	

Video ES Attributes

field	value
ES Type	MPEG-2 video
width	720
height	480
...	

Audio ES Attributes

field	value
ES Type	AC-3
channel count	
sample_size	
...	
sample_rate	

FIG.20

sample_description_entry 18

field	value	Complement
size		Store Data Size of sample_description_entry
data-format	'p2sm'	Information Showing Identity as MPEG2-PS Including MPEG-2 Video
version	1	Version Number of Specifications
data-reference-index	1	Store ID Referenced by chunk offset atom
Writing Start Date and Time	May 05, 2001, 09:23:00	Store Writing Start Date and Time
Presentation Start Time		Store Timing Information about First Video Frame
Presentation End Time		Store Timing Information about Last Video Frame
Aspect Information	4:3	Store Aspect Information
Video ES Attributes		Store Information about Video Stream
Audio ES Attributes		Store Information about Audio Stream
Discontinuity Point Start Flag	0	Indicate That Previous and Current Moving Picture Streams are Completely Continuous Program Stream
Seamless Information		Store Information about Seamless Playback If Previous and Current Moving Picture Streams are Discontinuous

FIG.21

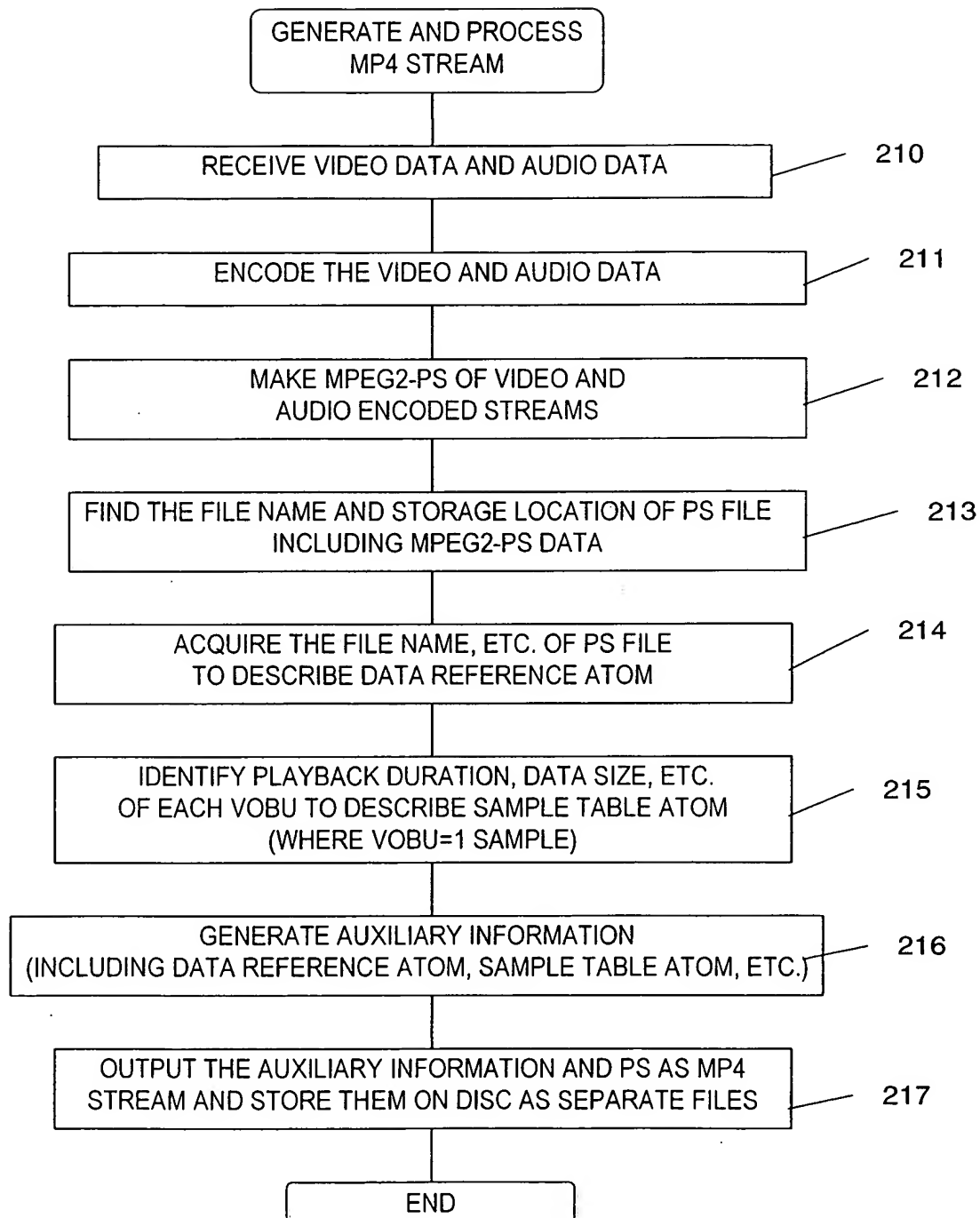


FIG. 22

		MPEG2 Video (ES)		MPEG2-PS	
		M/O	CONVENTIONAL EXAMPLE	THE PRESENT INVENTION (1)	THE PRESENT INVENTION (2)
STRUCTURAL CONCEPT	sample	M	video frame	VOBU	Video Frame with Pack Header
	chunk	M	GOP	Overall Series of VOBUs (or VOB)	VOBU
	sync-sample	O	GOP with SEQ	—	—
ATOMS TO MAKE UP SAMPLE TABLE ATOM	Decoding Time to Sample Atom	M	video frame Period	VOBU Playback Duration	video frame Period (Fixed)
	Sample Size Atom	M	video frame size	VOBU Size	— (Not Used)
	Sample Description Atom	M	Stream Information	Stream Information	Stream Information
	Sample to Chunk Atom	M	Playback Duration of Each Chunk	Total Number of VOBUs (for One Entry)	Playback Duration of Each VOBUs
	Chunk Offset Atom	M	Top Address of Each Chunk	Top Address of VOBUs (for One Entry)	— (Not Used)
IN USER DATA ATOM	VOBU Size Atom (NEW)	—	—	—	VOBU Size
	Reference Picture Size Atom (NEW)	—	—	I-frame size	I-frame size

FIG.23

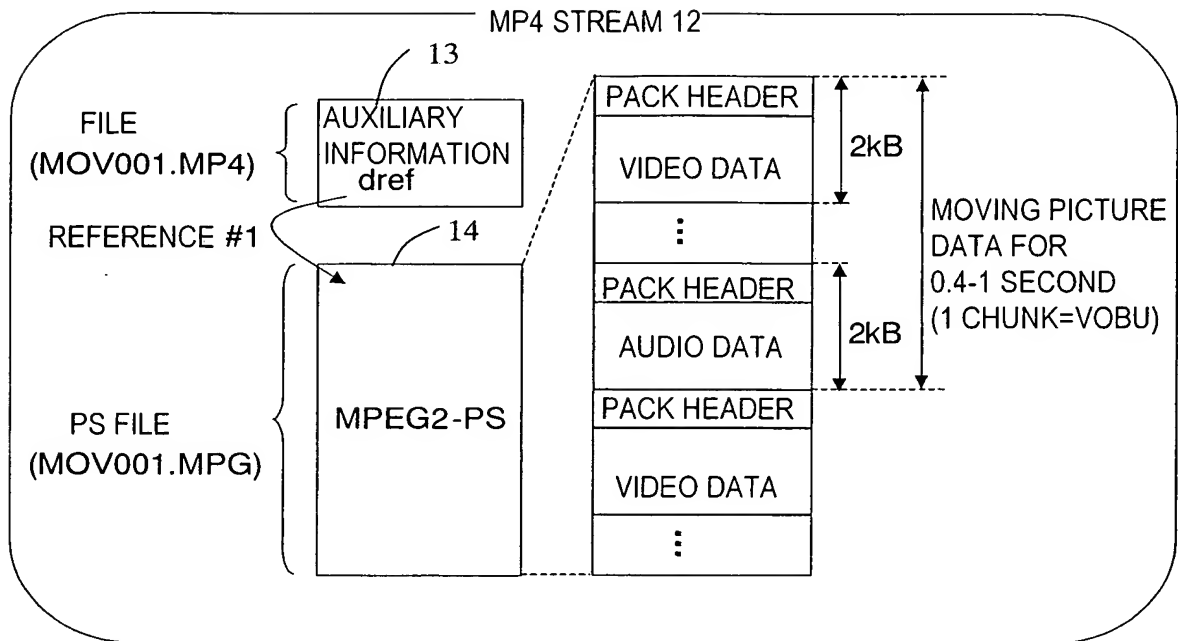


FIG. 24

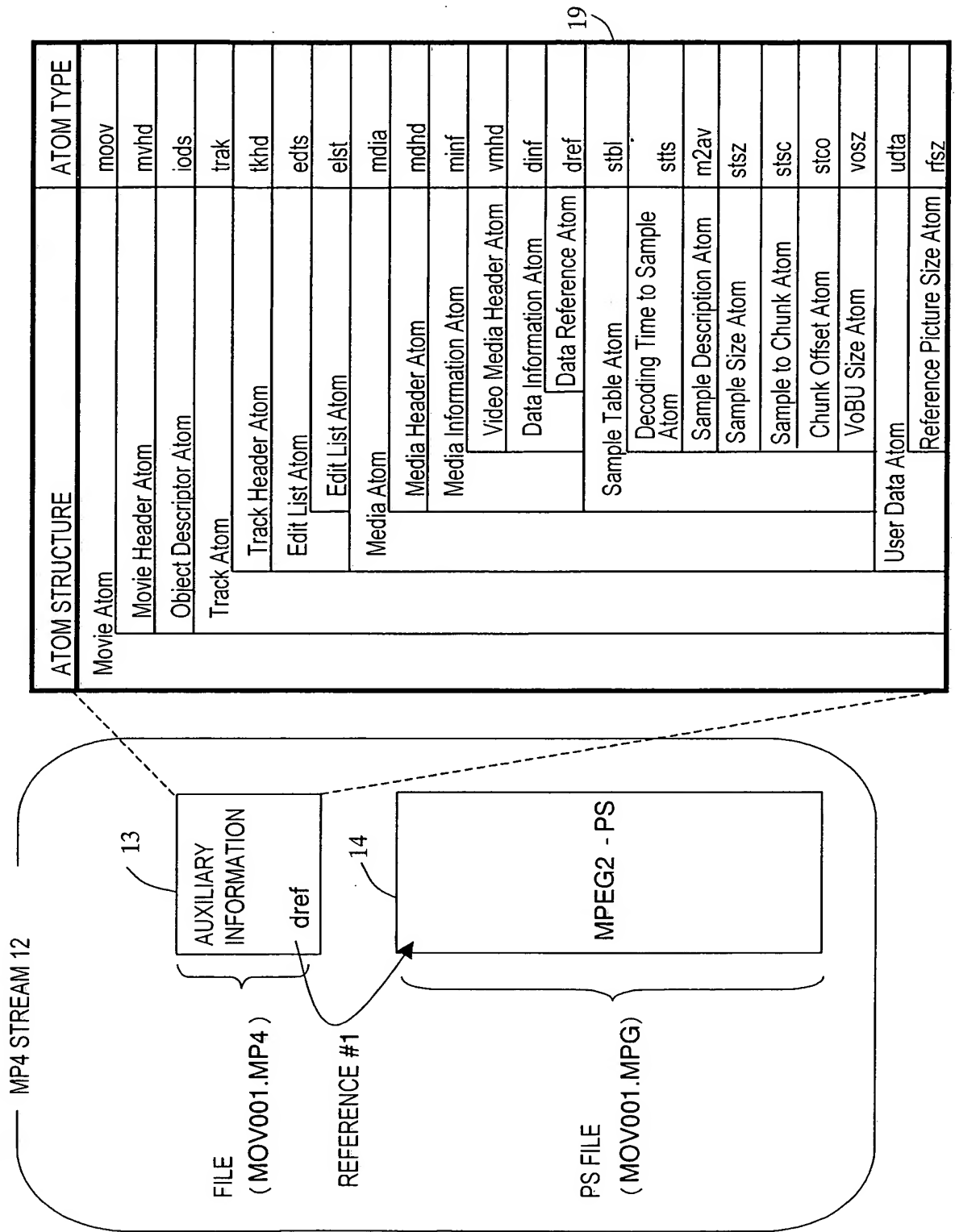


FIG.25

ATOM TYPE	FIELD NAME	REPEAT ABLE ?	DATA SIZE [UNIT]	DESCRIPTION	SETTING
Sample Table Atom	stbl				
Decoding Time to Sample Atom	entry-count		4[Byte]	Number of Entries	1 Entry
	sample-count	○	4[Byte]	Number of Samples	Total Number of Video Frames
	sample delta	○	4[Byte]	Sample time scale	100/3001 sec
Sample Description Atom	m2av (NEW)				
Sample Size Atom	sample-size		4[Byte]	Default Sample Data Size	Not Used
	sample count		4[Byte]	Number of Samples	
	entry-size	○	4[Byte]	Sample Data Size	
Sample to Chunk Atom	entry-count		4[Byte]	Number of Entries	TMAP_GI
	first-chunk	○	4[Byte]	Chunk Index Number	VOBU_ENT_Ns
	samples-per-chunk	○	4[Byte]	Number of Samples	VOBU_ENT
	sample-description-index	○	4[Byte]	Sample Description Index Number	VOBU_PB_TM
Chunk Offset Atom	entry-count		4[Byte]	Number of Entries	Not Used
	chunk-offset		4[Byte]	Chunk Offset	
VOBU Size Atom	vosz (NEW)	○	4[Byte]	VOBU Data Size	VOBU_ENT
Reference Picture Size Atom	rfsz (NEW)	○	4[Byte]	End Address of First I-Picture in VOB	1STREF_SZ

FIG.26

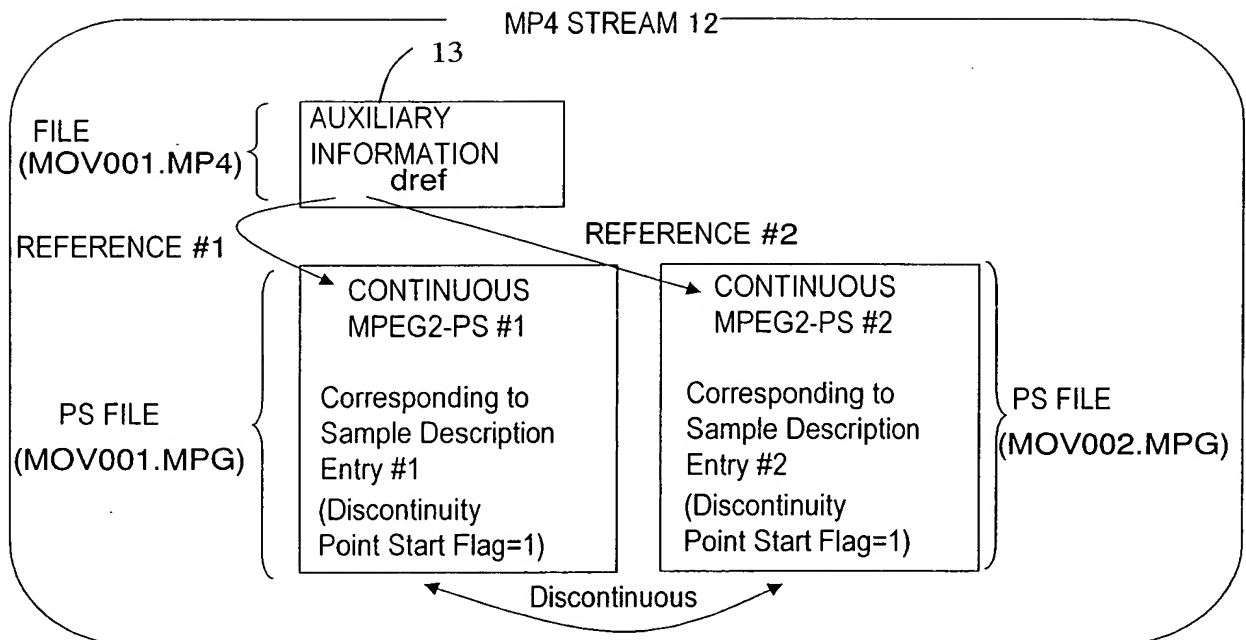


FIG.27

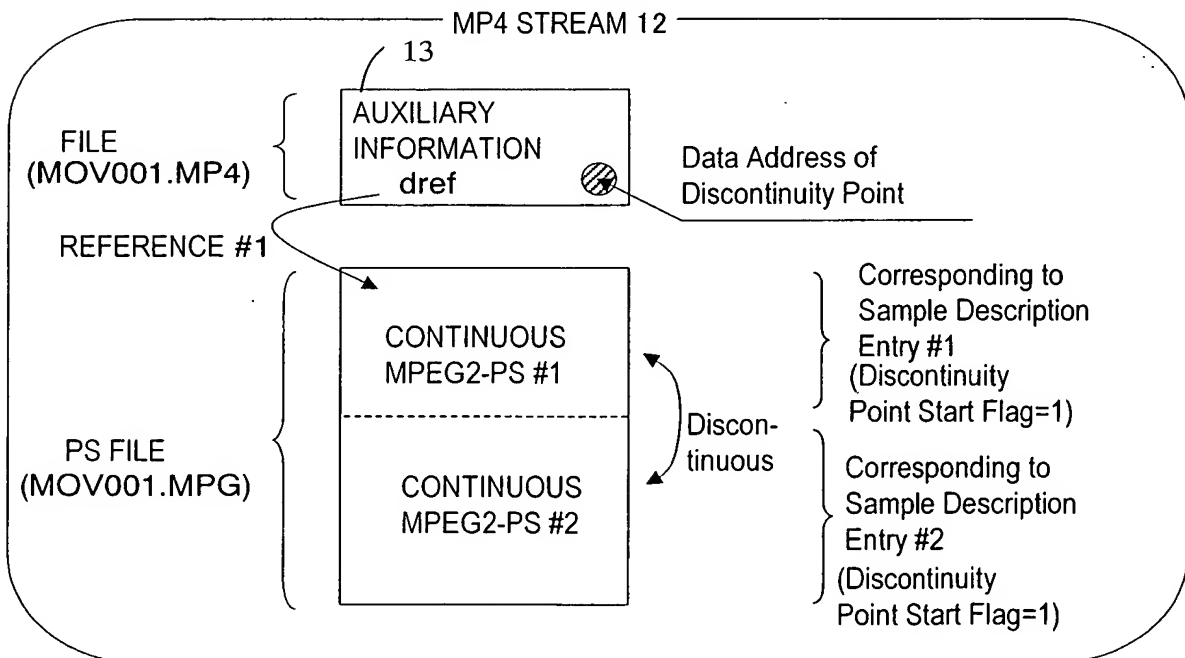


FIG.28

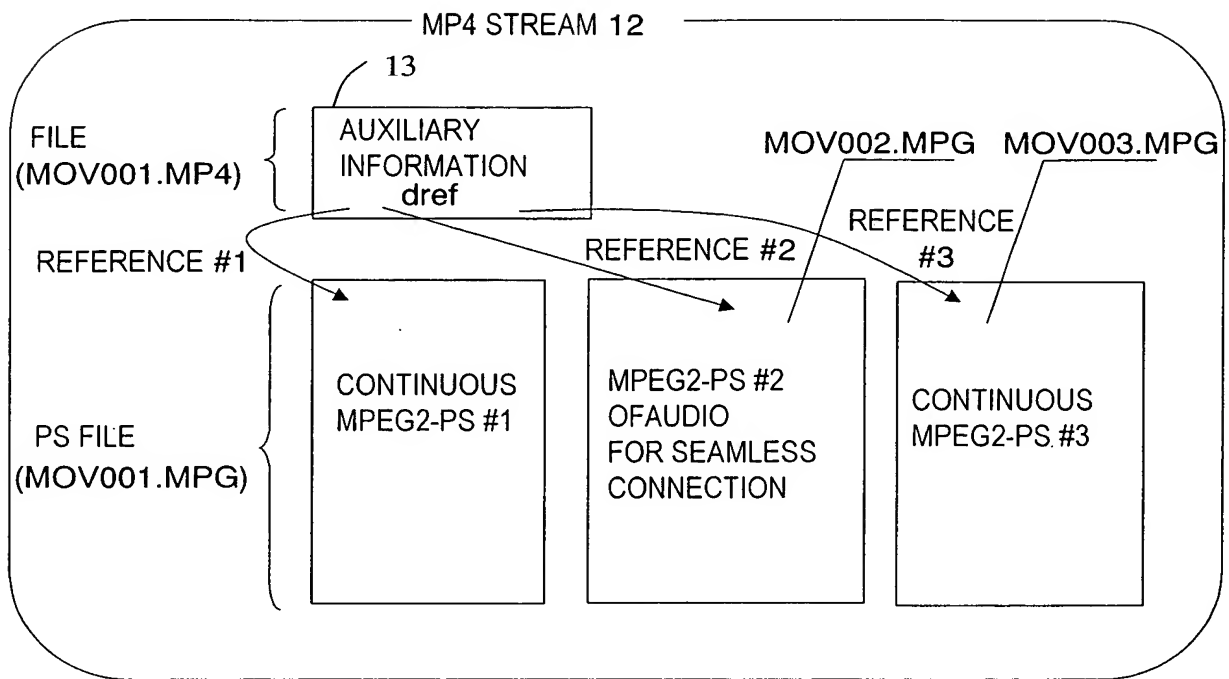


FIG. 29

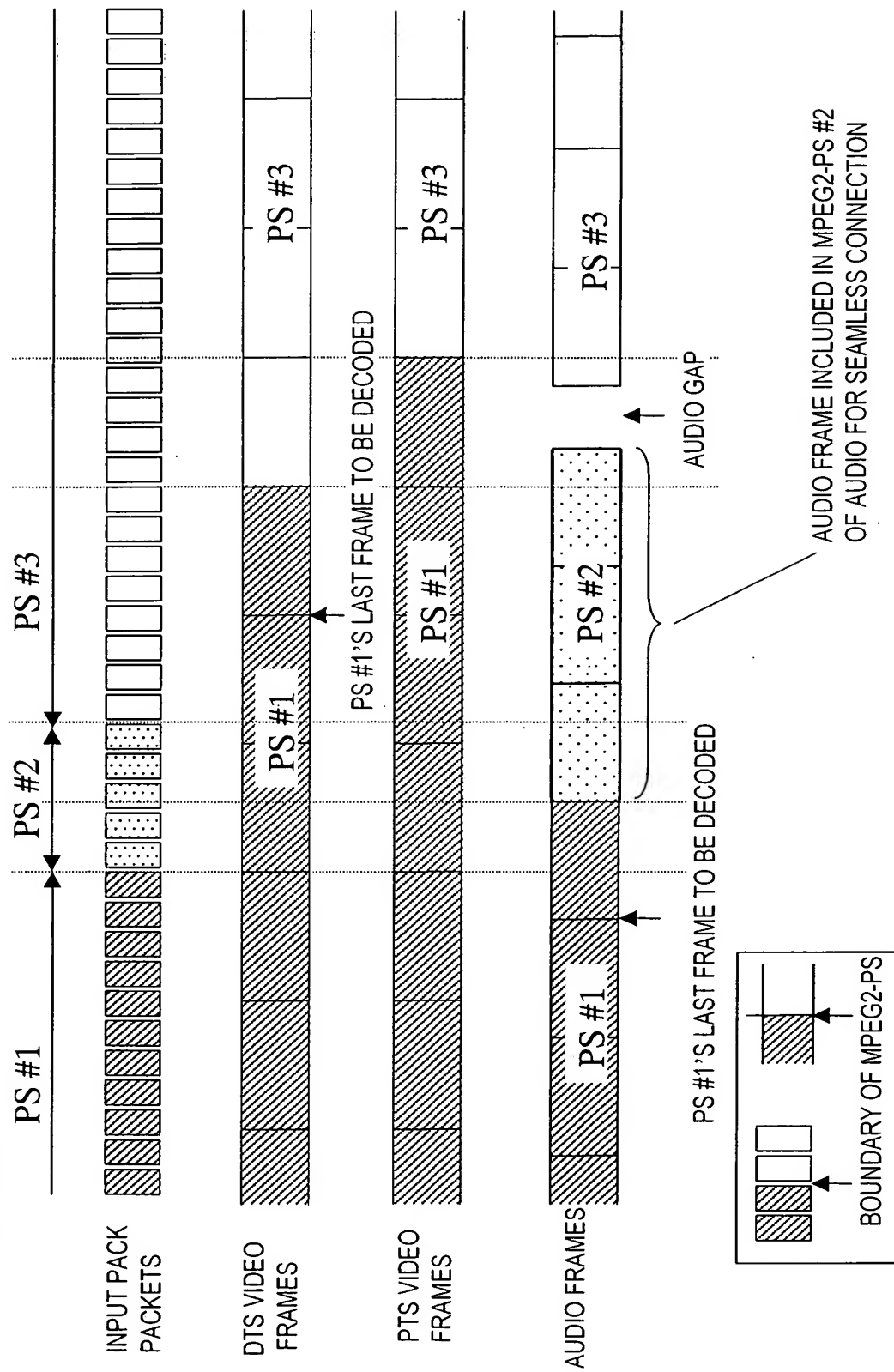


FIG. 30

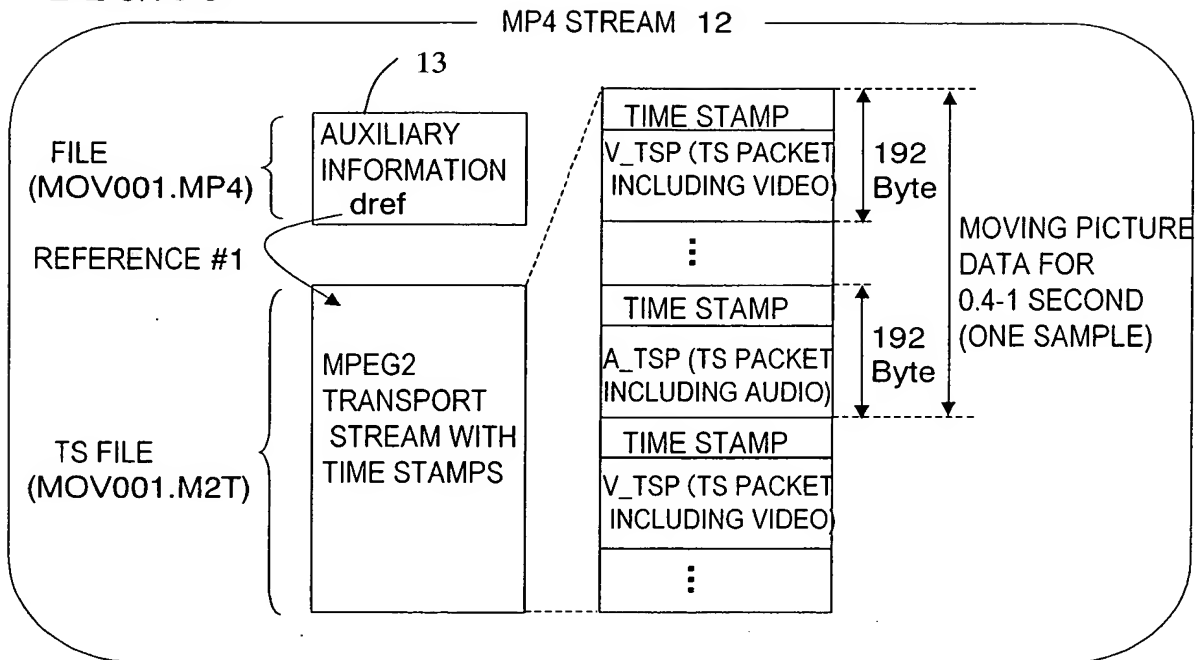


FIG. 31

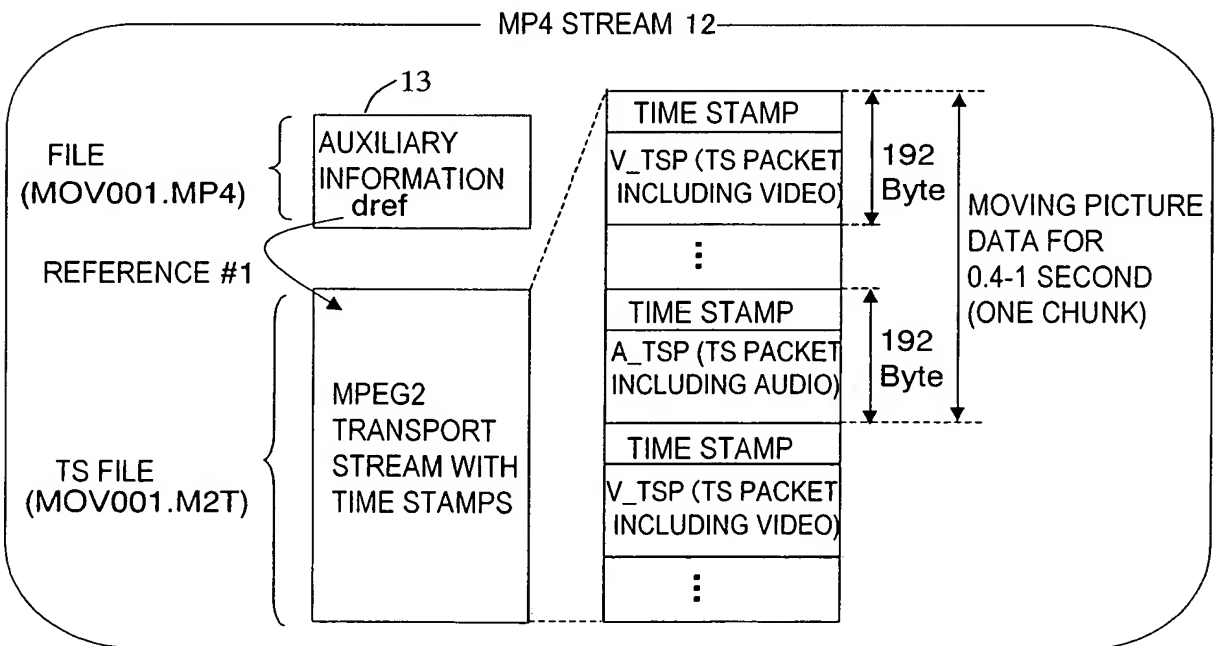


FIG. 32

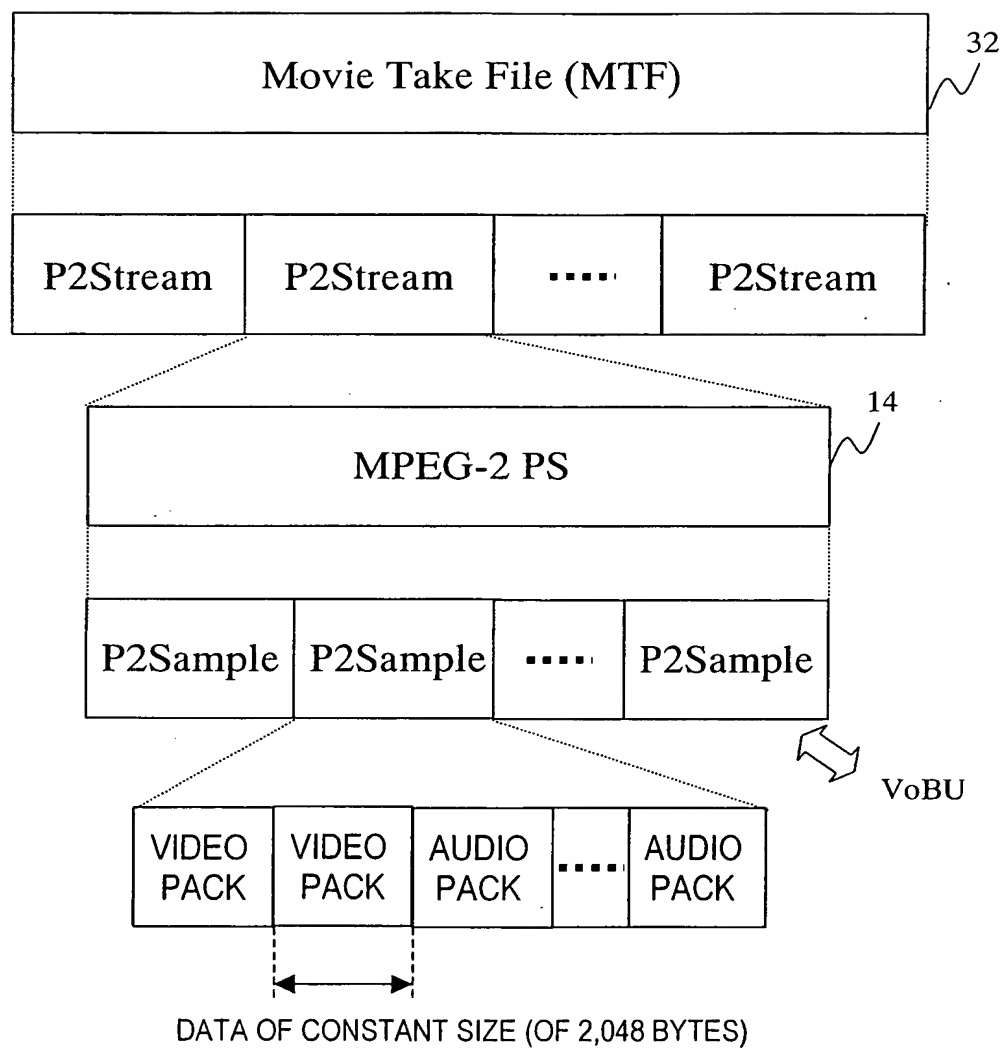


FIG. 33

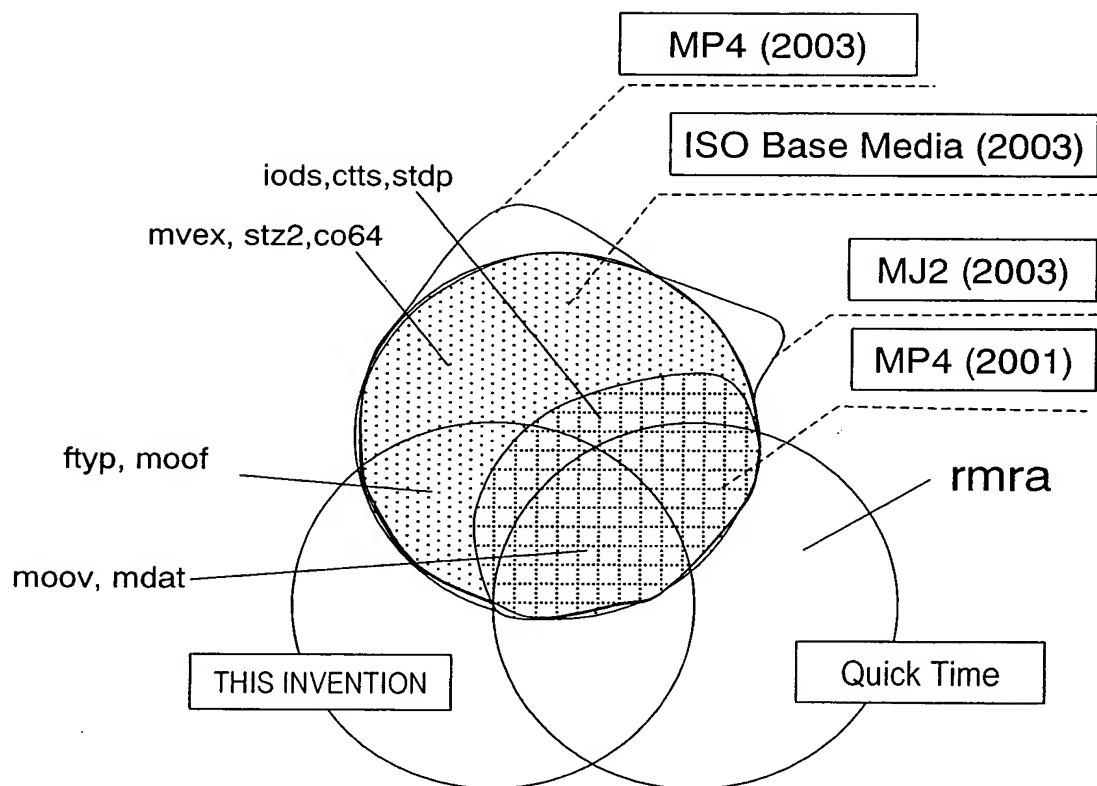


FIG. 34

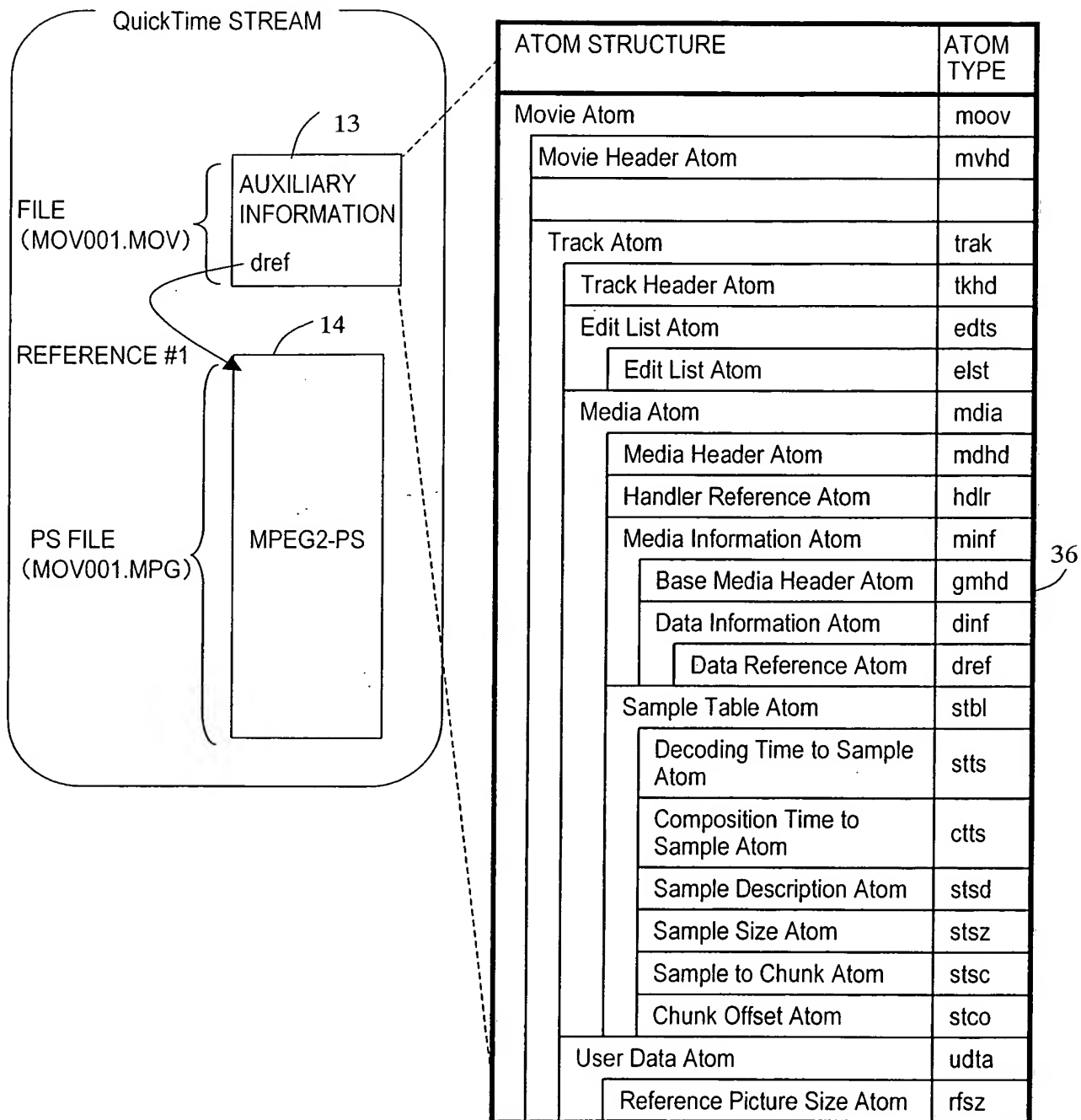
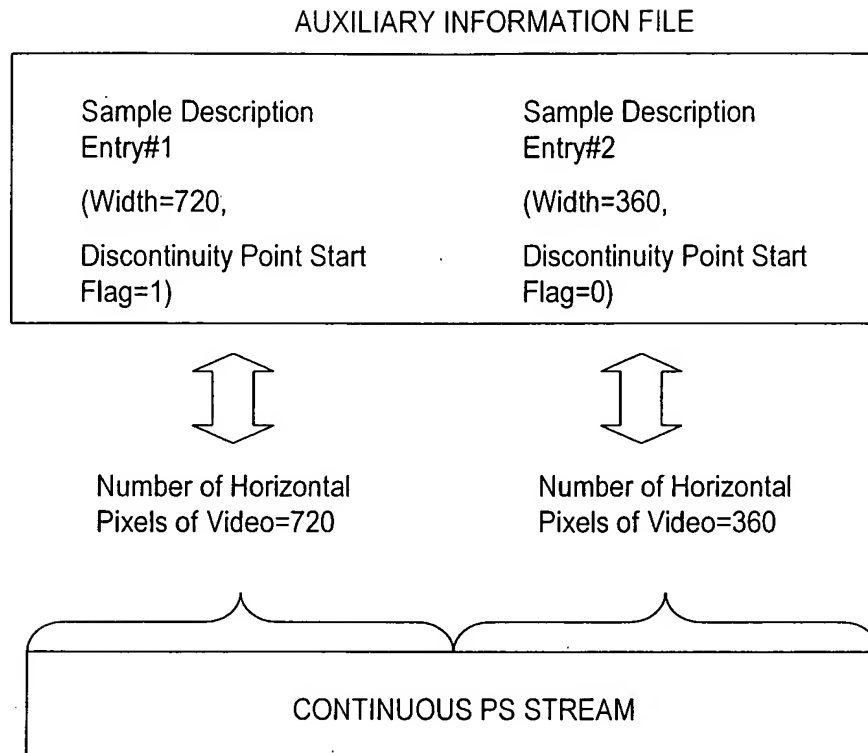


FIG. 35

ATOM STRUCTURE	ATOM TYPE	
Movie Atom	moov	(Declaration of Movie Atom)
Movie Header Atom	mvhd	Store Writing Date and Time
Track Atom	trak	(Declaration of Track Atom)
Track Header Atom	tkhd	Store Track ID
Edit List Atom	edts	(Declaration of Edit List Atom)
Edit List Atom	elst	Specify Playback Range and Timings
Media Atom	mdia	(Declaration of Media Atom)
Media Header Atom	mdhd	Specify Time Information Unit
Handler Reference Atom	hdlr	Store component_subtype="m2ps" Showing Identity as MPEG2-PS
Media Information Atom	minf	(Declaration of Media Information Atom)
Base Media Header Atom	gmhd	Show Identity as Neither Video Frame nor Audio Frame
Data Information Atom	dinf	(Declaration of Data Information Atom)
Data Reference Atom	dref	Store Moving Picture Stream File in URL Form
Sample Table Atom	stbl	(Declaration of Sample Table Atom)
Decoding Time to Sample Atom	stts	Store Playback Duration of Each VOB
Sample Description Atom	stsd	Show Identity as MPEG2-PS Including MPEG-2 Video and Also Show Specifications of PS Stream
Sample Size Atom	stsz	Store Size of Each VOB
Sample to Chunk Atom	stsc	Store the Number of VOBs to Make One Chunk When Overall MPEG File is Treated as One Chunk
Chunk Offset Atom	stco	Store Chunk Offset=0 as MPEG2-PS Starts from Beginning of MPEG File
User Data Atom	udta	(Declaration of User Data Atom)
Reference Picture Size Atom	rfsz	Store End Location of Top I-Frame of Each VOB as Offset Value from Top of VOB

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FIG.36



PS FILE

FIG.37

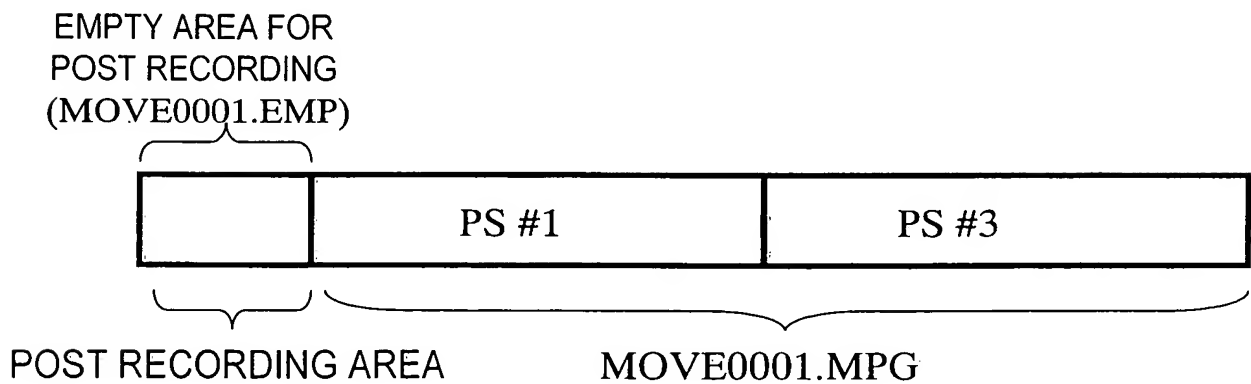


FIG.38

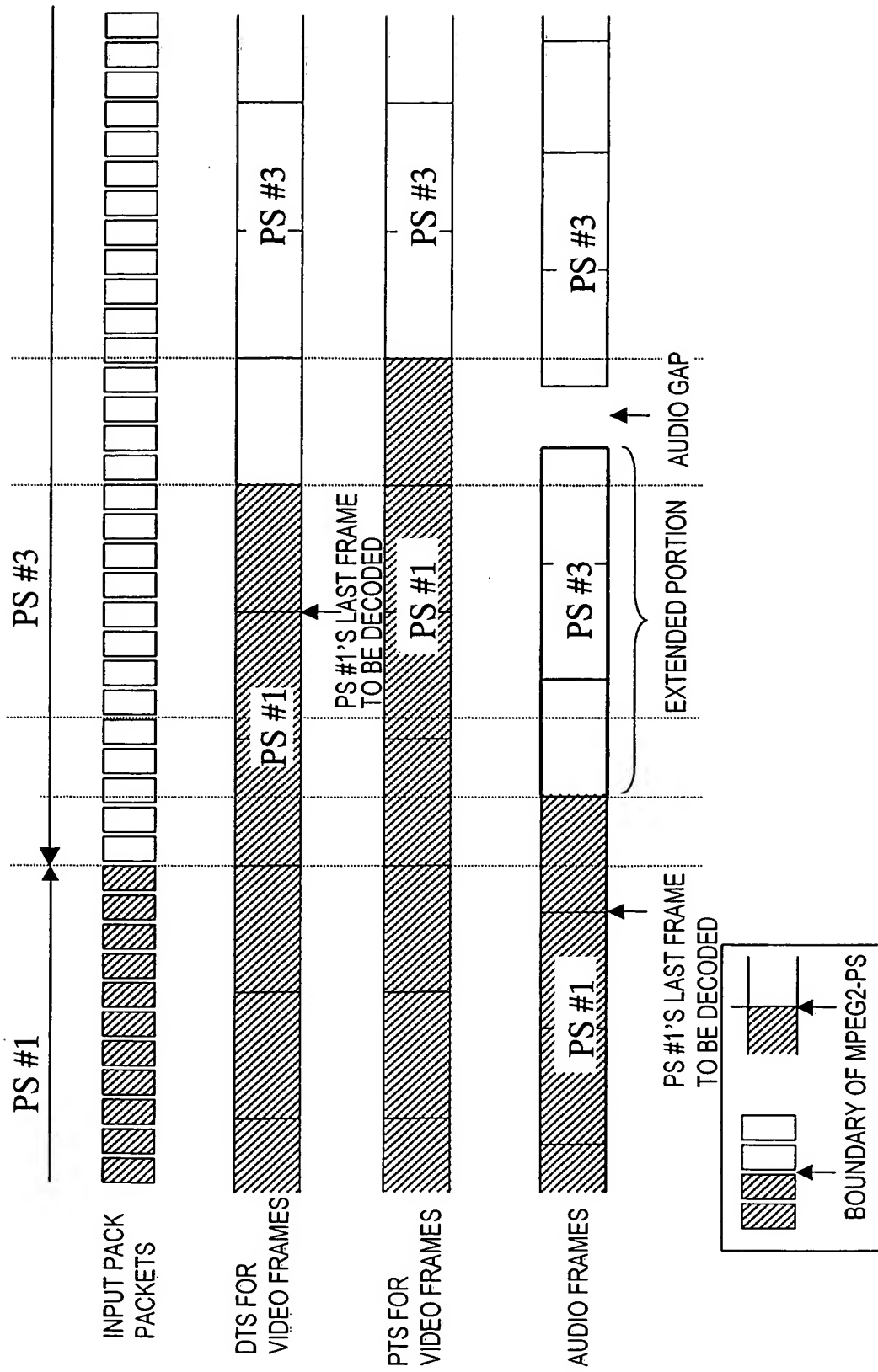


FIG. 39

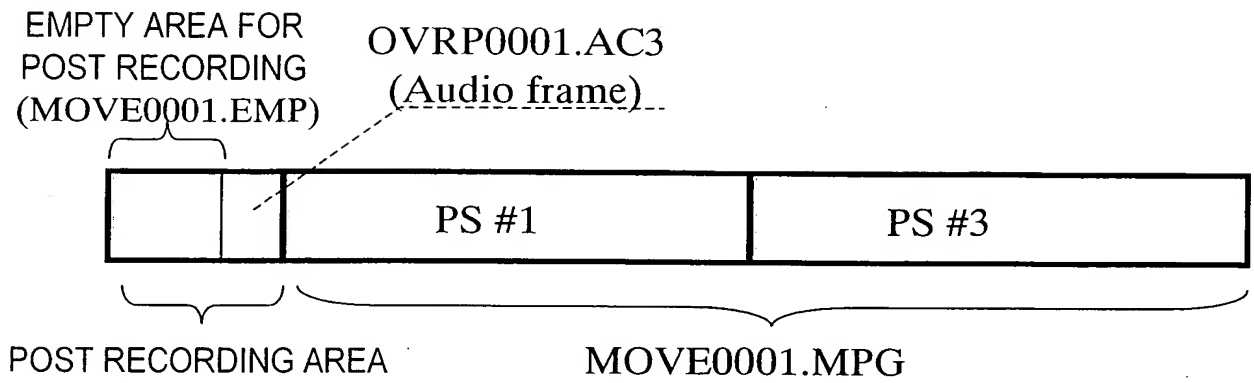


FIG. 40

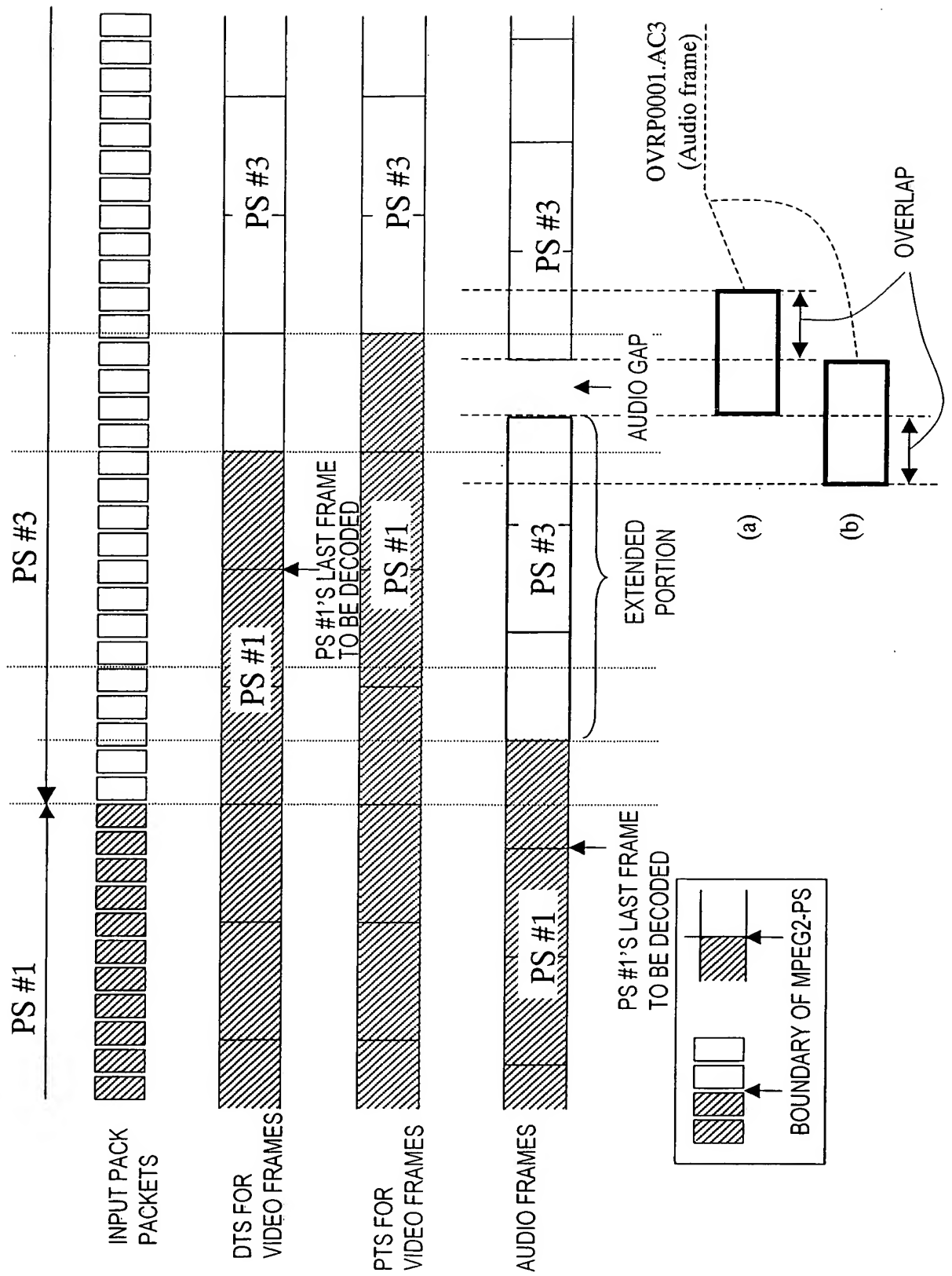


FIG. 41

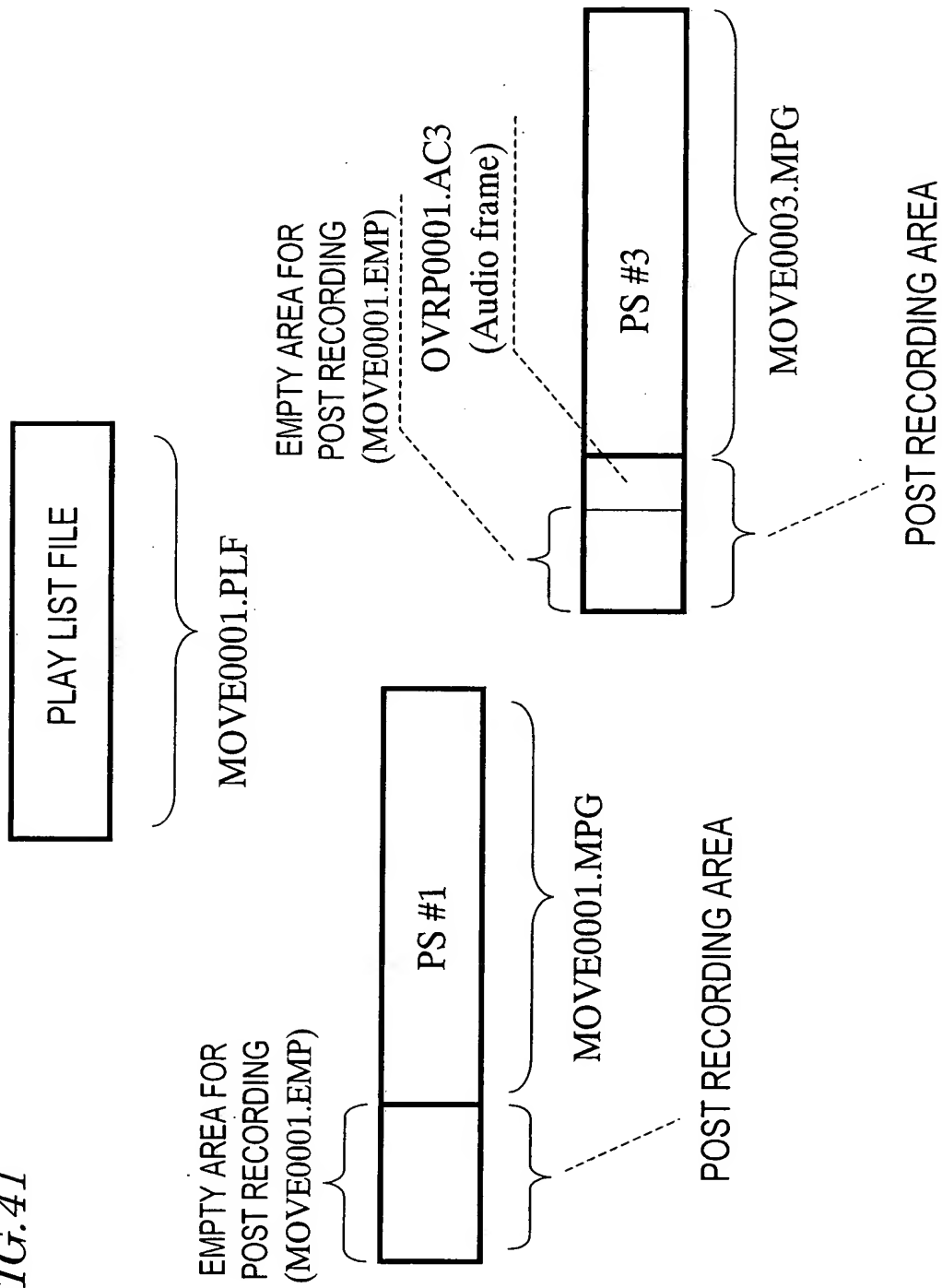


FIG.42

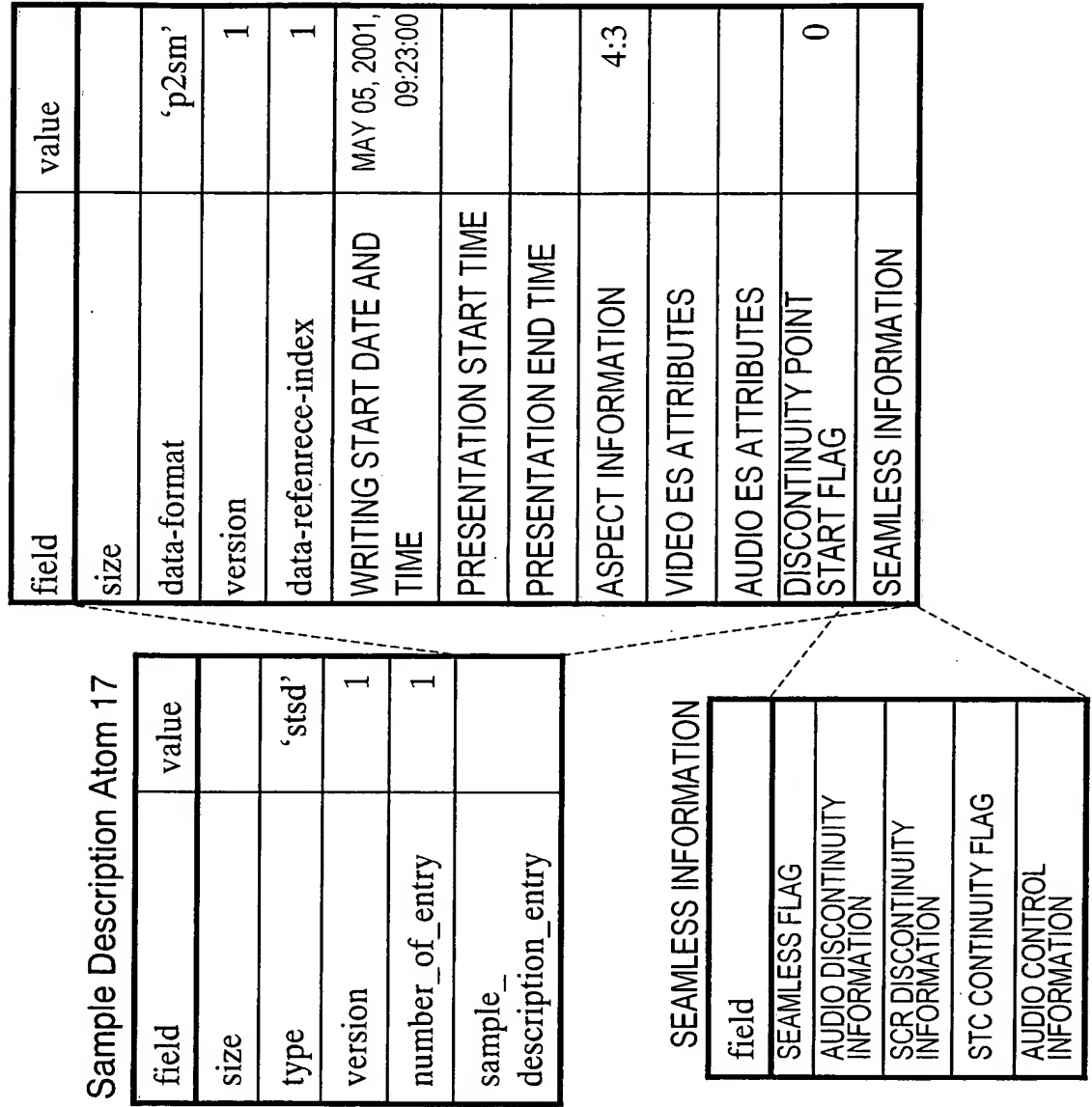


FIG.43

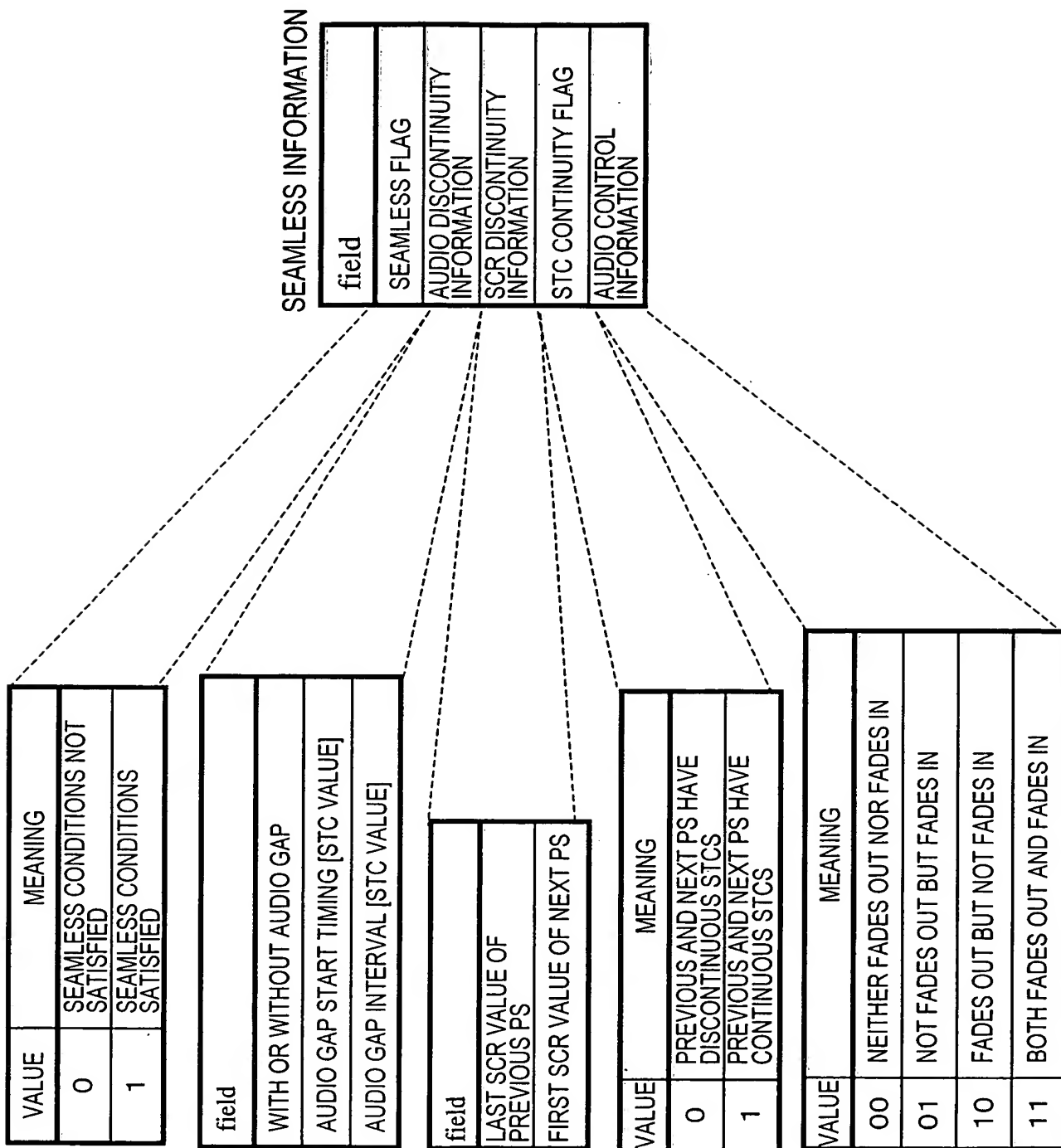
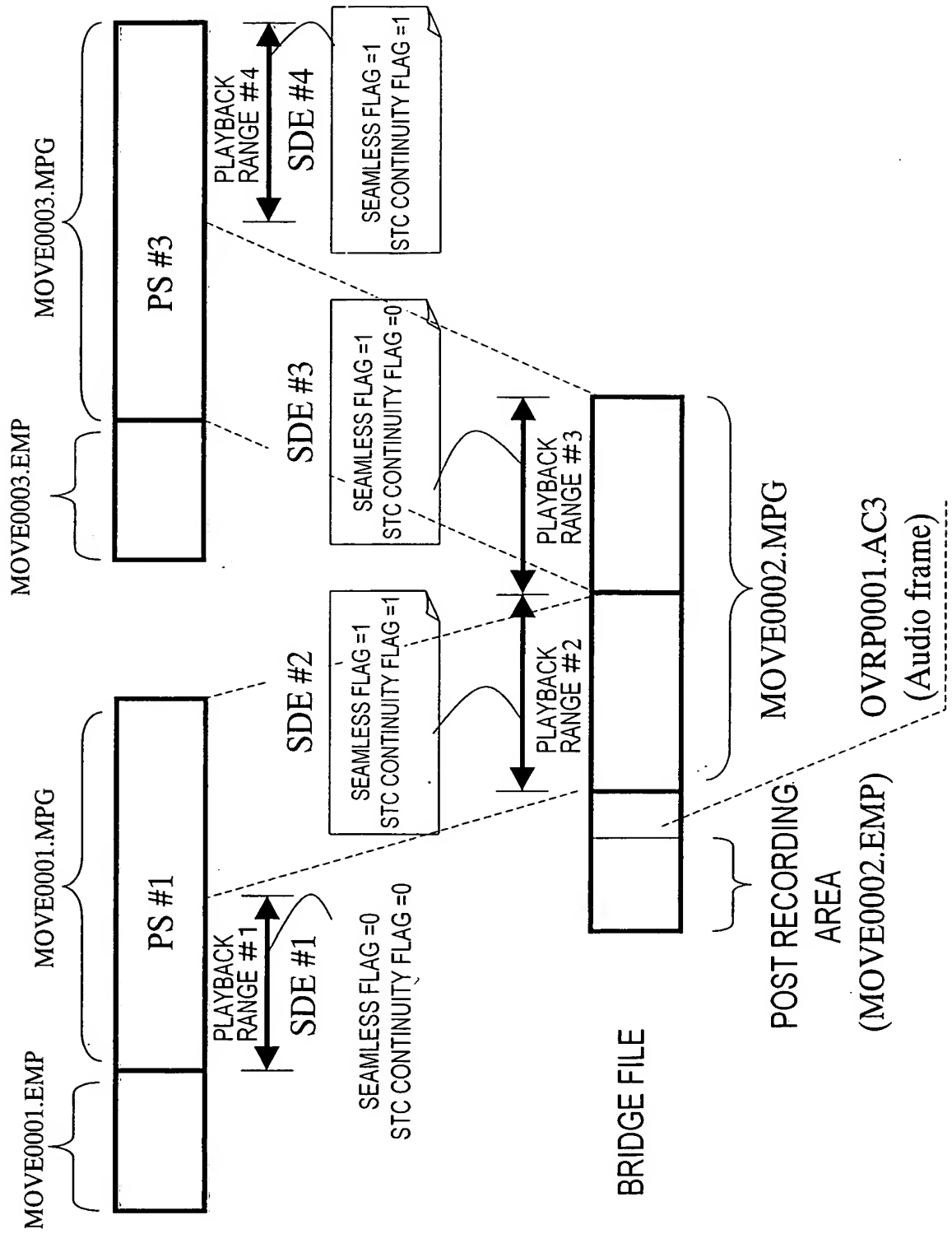
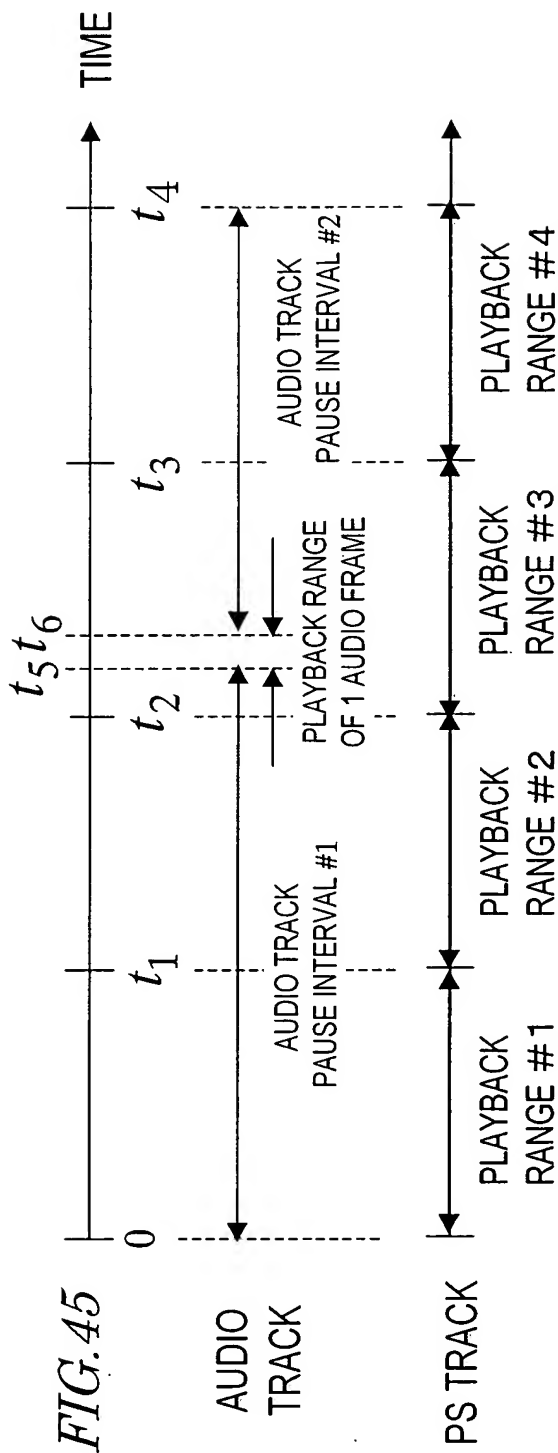


FIG. 44





EDIT LIST TABLE FOR EDIT LIST ATOM OF PS TRACK	PLAYBACK RANGE #1	PLAYBACK RANGE #2	PLAYBACK RANGE #3	PLAYBACK RANGE #4
	track_duration	t1	t2-t1	t3-t2
	media_time	0	0	t3-t2
	media_rate	1.0	1.0	1.0

EDIT LIST TABLE FOR EDIT LIST ATOM OF AUDIO TRACK	PAUSE INTERVAL #1	PAUSE INTERVAL #2
	track_duration	t5
	media_time	-1
	media_rate	1.0

FIG.46

